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INDEX TO AUTHORS

- Allen, J.,
Potential Increase of Activity of Medicinal Mixtures, 111
- Agulnon, H.,
Action of Light on Proteolytic Ferments, 109
- Allan, W.,
Thynol a Remedy for Tape Worm, 643
- Alpers, W. C.,
Buying Synthetic Remedies, 92
- Aisberg, C. L.,
Biography, 119-20
Policy of Bur. of Chemistry in Enforcing Food and Drugs Act, 398
- Apple, F. M.,
Commercial Advantages of Properly Applied Professional Pharmacy, 481
Coin-Shape for Bichloride Tablets, 953
- Arday, H. V.,
Uniform Extract of Cudbear, 47
International Standards for Colored Fluids, 76
Association Home, 510
- Aufrecht, Dr.,
Hardened Oils, 262
- Baillie, J.,
Extension of the Propaganda, 101
- Baker, R. T., and Smith, H. G.,
Australian Eucalyptus; Melaleuca Oils, 258, 259
- Baker, W. F.,
Baker, W. F., see Miller, F. A.
- Barlow, C. H.,
Suicide by Drinking Solution of Salt, 104
- Barnard, H. E., and McAbee, W. D.,
Phosphoric Anhydride Content of Simple and Compound Syrup of Hypophosphites, 1505
- Beal, J. H.,
Values of Vegetable Drugs as Ranked by Physicians, 1
Parcels Post Under Zone System, 3
Ante-mortem Conjectures and Post-Mortem Findings, 135
Anti-Narcotic Legislation, 137
Claims of Military Pharmacist, 287
When Sinners Entice, 289
Pharmacist and Patent Medicine, 425
Flood Damage to Druggists, 555
Hughes-Bacon Bills, 669
Federal Net Weight Law, 671
Comparative Doses of Heroin and Morphine, 672
Class Obligation and Responsibility, 673
Wood Alcohol Blindness, 817
Federal Anti-Narcotics Situation, 818
Harrison Bill Passes the House, 821
The Approaching Meeting, 925
Distinguishing Marks for Dangerously Toxic Tablets, 929
State of the Pharmacopoeia, 933
Enforcement of Laws Relating to Public Health, 944
Report of the General Secretary and Editor of the Journal, 1013
Objections to the Harrison Bill, 1489
- Beck, O. A.,
Oleoresin of *Pseudotsuga Taxifolia*, 1566
Crystalline Resin Acid from *Pinus Sabini-ana*, 1569
- Beck, O. A., and Kremers, E.,
Crystalline Acid from Oleoresin of Digger's Pine, 303
Oleoresin of *Pseudotsuga Taxifolia*, 303
- Bechet, P. E.,
Pyramidon Poisoning, 644
- Beckhold, H.,
Colloids in Medicine, 775
- Beckel, A.,
Dextrogyrate Lupanine, 1001
- Becker, M. M., see Roberts, J. G.,
Beckurts, H., and Frerichs, H.,
Composition of Ichthyl-Ammonium and Some Substitutes, 335
- Berger, F.,
Medicinal Use of Ants, 525
Masticulating Agents, 639
Gunpowder in Medicine, 1001
Lithium, 1002
- Berlinger, G. M.,
Biography, 118
Report of Committee on Unofficial Standards, 248
Liquor Ferri Iodidi, 597
Report of Committee on Standards for Unofficial Drugs and Chemicals, 1074
Magma Magnesiae, 1141
Elixir Ferri Quininae et Strychninae Phosphatum, 1142
Plan for Membership Campaign, 1329
Report of Committee on Unofficial Standards, 1514
- Berlinger, G. M., Jr.,
Prescription Kinks and Hints, 1303
- Bernegau, L. H., and E'we, G. E.,
Assay of Asafoetida Tablets, 528
- Bernegau, L. H., and Glickman, L. L.,
Assay of Pepsin and its Preparation, 152
- Bernegau, L. H., and Heidelberg, F.,
Determination of Morphine in Tablets, 774
- Best, J.,
Reminiscences of Pharmacy in the Rockies, 325
- Biddle, H. C.,
Relation of Conversion of Cinchonine and Quinine into Cinchotoxine and Quinotoxine to Toxicity of Cinchona Alkaloids, 771
- Binz, E. G.,
Oil of Eucalyptus Globulus and Solubility test, 183
- Blakely, C.,
Early Drug Stores in Vermont, 464
- Bodemann, W.,
Legal and Moral Standards, 943
- Bordas, F., and Touplain, F.,
Acidity of Milk, 899
- Borell, H. A., Obituary, 808
- Bourquelot, E., and Bridel, M.,
Emulsions, 263
- Bower, L. T.,
Volumetric Determination of Carbon Dioxide, 527
- Bradley, T. J.,
What is Adulteration? 53
- Brauns, D. H.,
Crystalline Kombé-Strophanthin, 843
Brauns, D. H., and Clossen, O. E.,
Crystalline Kombé-Strophanthin, 604, 715
- Brewer, J. E.,
Summary of Drug Examination Results, 963
- Brown, L. A.,
Time to Strike Back, 89
Sweet Spirit of Nitrous Ether, 520
Assay for Aromatic Sulphuric Acid, 900
Spirit of Ammonia, 1006
- Brucker, C. F. J., Obituary, 666
- Burdick, M. M.,
Palatable Medication, 218
- Burge, J. O.,
"On to Nashville," 811
The Druggist and the Pay Telephone, 831
- Burgess, L. L., and Kann, O.,
Cobaltinitrites and their Application to Analytical Chemistry, 772
- Burmahn, J.,
Comparative Activity of Medicinal Plants, 525
Assay of Digitalis, 640
Focke's Assay of Digitalis, 1002
- Burnside, C. B.,
Label Varnish Substitute, 600
- Cain, J. R., and Hostetter, J. C.,
Reduction of Vanadic Acid in Concentrated Sulphuric Acid by Hydrogen Peroxide Persulphates, 1004
- Campbell, O. H.,
Common Salt Poisoning, 39
Poisoning by Sodium Chloride, 643

- Capp, J. A.,
Es of Iodides, 645
- Charles, E.,
Utilization of Fruit Jars for Wines, 111
- Carney, R. J.,
Reagent, "Tetramethyl Base," 1003
- Chambers, H. L.,
Why Physicians do Not Read the Pharmacopoeia, 572
- Charabot, B.,
Formation and Distribution of Odorous Products in plants, 1561
- Cheray, F. J.,
Doctor, Druggist and Patent Medicine from Proprietary Standpoint, 186
- Chevalier, J.,
Valerian, 258
- Christen-en, H. C.,
Principles and Objects of Pharmacy Legislation, 222
- State Board of Pharmacy Examinations, 1126
- Chuard and Mellet,
Amount of Nicotine in Tobacco Plant, 526
- Clark, A. H.,
Increase in Strength of Potassium Hydroxide Volumetric Solution, 301
- Report of Committee on Membership, 1072
- Claus, F., Mrs.,
Report of the Executive Committee, 1291
- Clayton, C. J.,
Colorado Pharm. Assoc, 703
- Clossen, O. E., see Brauns, D. H.
- Cloughly, O. J.,
Iron Iodide, 1004
- Elixir Ferri Quininae et Strychninae Phosphatum, 1004
- Tinct. Opii, 1005
- Collins, A. T.,
Assay of Spirit of Camphor, 900
- Cook, E. E.,
U. S. Pharmacopoeia and National Formulary, 173
- Sterilization in the Pharmacy, 905
- Laboratory Equipment for Manufacture of Galenicals by Retail Pharmacist, 1156
- Cook, T. P.,
Biography, 277, 417
- Cooper, Z. M.,
Teaching of Pharmaceutical Arithmetic, 572
- Association and Opportunity, 1296
- Crichton, M. L.,
Women's Work in the A. Ph. A., 1281
- Dael, F.,
Determination of Alkaloids in Drugs, 107
- Day, W. B.,
A Needed Piece of Legislation, 5
- Address of President, 1025
- Debourdeaux,
Effect of Age on Morphine Content of Opium, 380
- De Cottrau,
Variation of Antidiphtheric Sera, 525
- Delenze, M. C.,
Antitrypsin and Meiotagmin Reactions, 640
- Dennehy, C. J.,
Socotrine Aloes, 985
- Dewey, A. H.,
Need of Federal Legislation in Pharmacy, 622
- Diehl, C. L.,
Rept. of Committee on National Formulary, 166, 1063
- Progress of Pharmacy, 1065
- Dickman, G. C.,
Report of Committee on Weights and Measures, 1251
- Dobbie, J. J.,
Analyzing Medicines, 857
- Doggett, L. M.,
Woman in the Pharmaceutical and Scientific Laboratory, 1287
- Dohme, A. R. L., and Engelhardt, H.,
Guaiacol and Creosol-Acetic Acids and Some Derivatives, 293
- Duffay, A.,
Test for Brucine in Strychnine, 109
- Dufay, A.,
Nitrocellulose Preparation, 377
- Dunn, M.,
Aqua Caryophylli, 775
- Eberly, E. G.,
Cooperation, the Life of Trades and Professions, 867
- Eckler, C. R.,
Physiological Test, 725
- See Haskell, C. C.
- Egan, T. A.,
Manipulation of Unguent. Zinc Oxide, 773
- Eggleston, C.,
Duration of Chemical Action of Iodides, 61
- See Hatcher, R. A.
- Elman, J. W., See Meerk, F. N.
- Eichenbaum, A.,
Synthetic Remedies—25 Years, 777
- Ekerantz, T.,
Geschichte der Chemie (book review), 1335
- Ekert, G.,
Vine in Culture and Medicine, 639
- Eldred, F. R.,
Drying Residue of Cantharidin, 22
- Deterioration of Pharmaceutical Preparations, 1109
- Eldred, F. R., and Pence, C. M.,
Estimation of Albumin in Urine, 154
- Elsdon, G. D.,
Determination of Lead in Chemicals, 106
- Emerson, H. W., and Weidlin, E. R.,
Jamaica Camphor—Determination of, 527
- Emmanuel, E.,
Plants of Dioscorides, 525
- Engelhardt, H.,
Purity of Chemicals and Drugs, 163
- See Dolme, A. R. L.
- England, J. W.,
Weights and Measures Guaranteed, U. S. P. Standard, 903
- Phenol Coefficient Method for Testing Disinfectants, 955
- Deodorized Tincture of Opium, 1140
- Minutes of the General Session, 1179
- Proceedings of the Council, 1212
- Association Home, 1467
- E'we, G. E., and Vanderkleed, C. E.,
Laboratory Notes, 979
- Fantus, E.,
Making of Candy Medicines, 95
- Candy Medication, 778
- Fehlmann, C.,
Examination of Honey, 639
- Feldstein, L.,
Refractive Index of Beeswax, 772
- Fennel, C. T. P.,
Education of Student of Pharmacy, 137
- Fernbach, A.,
Soluble Starch Obtained by Action of Acetone, 378
- Finnemore, H., and Braithwaite, D.,
Commercial Variation of Hyoscyne Hydrobromide, 198
- Finneran, J. E.,
Past, Present and Future Pharmacy Laws, 312
- President of N. A. R. D., 1314
- Fischelis, R. P.,
Economic Advantages in Manufacture of Galenicals by Retail Pharmacist, 1161
- Folin, O., and Denis, W.,
Colorimetric Determination of Vanillin, 902
- Forbing, J. W.,
Electrical Water Bath, 1561
- Forman, L., See LaWall, C. H.
- Frazier, W. J.,
U. S. P. as Stepping Stone to Higher Ideals, 700
- Freericks, F. H.,
Proposed Federal Anti-Narcotic Law, 40
- Report of Delegates to 1912 Convention of National Federation of Retail Merchants, 1078
- Report of Secretary of Section on Education and Legislation for 1912-13, 1518
- French, H. P.,
Drug Market, 860
- Frerichs, H., See Beck, H. H.
- Frey, R.,
Mentha piperita, 1111
- Mentha piperita, 1111
- Froberg, R.,
Gummy, 500

- Funk, C.,
Yeast Preventing Polyneuritis, 264
- Gale, E. O.,
Obituary, 283
- Gardner, A.,
Red Coloring Principle of Cudbear, 51
- Glickman, L. H., See Bernegau, L. H.
- Glickman, L. H., and Vanderkleed, C. E.,
Effect of Paraformaldehyde, Phenol and
Creosote on the Digestive Action of Pepsin,
Pancratin and Diastase, 958
- Goddard, J. G.,
Chairman's Address—Section on Historical
Pharmacy, 1271
- Goodwin, W. W.,
Obituary, 550
- Gordon, F. T.,
Naval Apothecary Since the Civil War, 57
- Graber, H. T.,
Influence of Size and Shape of Bottles
Upon Assay of Pepsin, 1507
- Gregory, W. G.,
Report of National Syllabus Committee,
1080
- Grüning, W.,
Iron Albuminate, 598
- Guillaume, C. E.,
Metric System, 112
- Haass,
Bacteriological Examination of Tubercu-
lous Sputum by Antiformin Method, 640
- Hamilton, A.,
Lead Poisoning, 644
- Hamilton, H. C., Lescohier, A. W., and Per-
kins, R. A.,
Physiological Activity of Cannabis Sativa,
22
- Hampshire, C. H., and Furnival, S.,
Examination of Commercial Solutions and
Tablets of Formaldehyde, 106
- Hancock, W. F.,
Report of Committee on Procter Memorial,
1078
- Handy, J. A.,
Questionable Prescription, 231
- Hare, H. A.,
Teaching of Materia Medica, 777
- Harris, N. M.,
Influence of Antiseptics on Intestinal
Flora, 644
- Hartwich and Jama,
Quino-Quino Balsam, 641
- Hartwich and Wichmann,
Starch Granules and a "Zahlkammer," 1002
- Hartwich, C.,
False Ipecac from Colombia, 525
Structure of Panama Hat Fibers, 526
- Harvey, R. E.,
Recent Buchu Adulteration, 1305
- Haskell, C. C.,
Influence of Alcohol Upon Toxicity of Dig-
italis for Guinea Pigs, 836
Elimination or Destruction of Strophan-
thus and Digitalis Glucosides by Guinea
Pigs, 1559
- Haskell, C. C., and Eckler, C. R.,
Standards for Some Biologically Standard-
ized Drugs, 146
- Hatcher, R. A., and Eggleston, C.,
Keeping Properties of Digitalis and Some
of Its Preparations, 876
- Hausmann, W.,
Toxicity of Methyl Alcohol, 775
- Havenhill, L. D.,
Report of the Chairman of the A. Ph. A.
Committee on U. S. P., 36, 1512
Chairman's Address, 1123
- Haynes, M. H., and Newcomb, E. L.,
Production and Valuation of Belladonna in
Minn., 431
- Heffter, A., and Sachs, F.,
Strophanthus Glucoside, 109
- Heidelberg, F., and Vanderkleed, C. E.,
Microscopic Examination of Ointments,
1134
- Helduschka, A., and Schmid, J.,
Infusions, 381
- Hensel, S. T.,
Compound Syrup of Hypophosphites, 85
Influence of Climate on Various Chemicals,
600
- Hill, C. A., and Cocking, T. T.,
Calcium Lactate, 107
- Hill, C. E.,
Assay of Formaldehyde, 904
- Hilton, S. L.,
Treasury Decision Regulating Importation
and Sale of Cocaine, 1331
- Hitchcock, J. E.,
Obituary, 419
- Holde, and Ubbelohde,
Differentiation of Benzin and Kerosene, 98
- Holmes, R. C.,
Deoleated Tincture of Strophanthus, 717
- Homerberg, V. O.,
Process of Assay for Sanguinaria, 1300
What is the Proper Time for Collection of
Sanguinaria?, 1302
- Hommel, P. E.,
Ammonium Hypophosphite, 904
Aromatic Syrup of Quinine, 904
- Horn, W. F.,
Calcii Lactophosphatis, 773
- Hoyer, J.,
Manufacture of Tablets by the Pharmaci-
st, 530
- Hubbard, W. S.,
Colorimetric Estimation of Vanillin, 907
- Husted, A. B., See Tucker, W. G.
- Humphries, G. S., et al.,
The Druggist and the Pay Telephone, 837
- Hynson, H. P.,
Restricted Materia Medica, 776
- Ihardt, W. K.,
Deodorized Opium, 905
Tinct. Opil, 1005
- Kelly, P. E.,
Liquor Sodae Chlorinatae, 1006
- J. K. S.,
Confidence Observed by Pharmacists in
Matter of Prescriptions, 46
- Jones, E. R.,
Liquid Shampoo or Toilet Soap, 1537
- Jones, H. W.,
Notes on the La Wall Assay Process, 1257
- Jordan, C. B.,
Preservation of Spirit of Nitrous Ether, 209
Hydrogen Peroxide Solutions, 344
History of Hydrogen Peroxide—Spirit of
Nitrous Ether, 527
- Judd, A. F.,
Examination of Tin Foils for Arsenic and
a Modified Gutzeit's Test, 961
- Jüttner, E., and Siedler, P.,
Insect powder, 899
- Kehler, L. F.,
Standards and Methods of Analysis, 307
Tincture of Iodine, 514
Quality of Drugs, 777
- Kerr,
Siam Benzoin—Styrax Benzoides, 378
- Kelsey, C. B.,
Coal Tar Products and Drug Trade, 1005
- Knapp, T.,
Swiss Tinctures and Fluidextracts, 1002
- Kraemer, H.,
Status of Pharmacist, 777
- Kremers, E.,
Report of the Historian, 462
Phytochemical Notes, 724
Les Apothecaires Dieppois du XVI au XIX
Siecle, 1334
See Beath, O. A.
- Krüger, H.,
Liq. Kali Arsenicosi, G. P. V., 112
- Kunze,
Fluidextract of Ergot, 381
- Lehman, L.,
Obituary, 283, 550
- Lackenbach, F. L.,
Pharmacy in California in 1913, 1264
- Lamb, A. B., and Marden, J. W.,
Quantitative Determination of Perchlor-
ates, 527
- Lamont, W. H.,
The Druggist and the Pay Telephone, 831
- Lamothe, L.,
"Lavandin"—Lavender Hybrid, 260
- Laf'ierre, E. H.,
Antodote for Fluorides, 529

- Lascoff, J. L.,
Dispensing of Oily Substances, 476
Saturated Solutions, 293
Chairman's Address, 111
- Latham, T.,
Elixir Ferri, Quininae et Strychninae Phos-
phatum—Rapid Formula, 292
- LaWall, C. H.,
When is Education Not Education?, 176
Santoninless Santonica, 596
Comparative Alkaloidal Strength of Root-
lets and Rhizome of Hydrastis, 773
Permanency of Bland's Pills, 905
Detection of Cane Sugar in Honey, 987
What is the Quality of the Pancreatin on
the Market?, 987
Device for Handling Hot Evaporating
Dishes, 989
Chemistry and Practical Jokes, 1144
- LaWall, C. H., and Forman, L.,
Estimation of Peppermint Oil in Spirit of
Peppermint, 1504
- Lescobier, A. W., See Hamilton, H. C.
- Lichthardt, G. H. P.,
Business and Opium Traffic, 689
- Linton, A. W.,
Commercial Samples of Drugs, 30
- Llewellyn, J. P.,
Important Dates in Chronology of Phar-
macy, 63
- Lloyd, J. T.,
Coca Users of Colombia, 1244
- Lloyd, J. U.,
Coca, the Divine Plant of the Incas, 1242
Rights to Lloyd's Reagents, 1555
- Lörinsch, F.,
Detection of Methyl Alcohol in Pharma-
ceutical Preparations, 196
- Lowe, C. B.,
Causes Leading to Success or Failure in
Pharmacy, 1543
- Lyons, A. B.,
Honorary President, Biography, 1578
- McAbee, W. D., See Barnard, H. E.
- McBride, R. S.,
Standardization of KMnO_4 Solution by So-
dium Oxalate, 771
- McDermand, G.,
Coal Tar Products, 1006
- McElhenie, T. D.,
Old-Time Brooklyn Drug Stores, 327
- Meilhney, P. C.,
Examination of China Wood Oil, 772
- McIntyre, E.,
Obituary, 282, 415, 552
- McIntyre, W.,
Obituary, 418
- McLaughlin, A. J.,
Interstate Waters and Spread of Disease,
645
- Main, T. F.,
National Association of Manufacturers of
Medicinal Products, 397, 401
- Mair, J.,
Reactions of Hydrocoerullignone, 641
- Marbach and Krösche,
Pyridine Derivatives, 1000
- Marquand, W.,
Microscopical Analysis of Aspirin and
Acetyl Salicylic Acid, 292
Klonopin, as Adulterant of Buchu, U. S.
- Marshall, C. R., and Marcelot, H.,
Development of Heat on Mixing Ether and
Chloroform, 378
- Marquier, A. P.,
Barb and Sodium Bicarbonate, 905
- Marshall, J. W.,
Determination of Alcohol in Tincture of
Iodine, 1161
- Marshall, C. R., and Wood, J. K.,
Acetylation of Extract of Indian Hemp
for Its Standardization, 381
- Marshall, E. C.,
N. England Letter, 779
Woman in Pharmacy, 994
- Martin, J. H.,
Official Preparations, 530
- Martin, N. H.,
Iodine of Thyroid Glands, 263
- Martindale, W. H.,
Say Method for Digitalis, 379
- Mason, C.,
Alcoholic Assay by Evaporation, 1007
- Mayer, J. L.,
Analysis of Castile Soap, 734
Quantitative Estimation of Chloroform in
Chloroform Liniment, 904
Quantitative Analysis of Zinc Ointment,
1143
- Mayo, C. A.,
Report of Committee on Pharmaceutical
Nomenclature, 1079
- Meillère, M. G.,
Detection of Pilocarpine in Presence of
Quinine, 108
- Meissner, Mrs. F. W., 549
- Mellendy, S. W.,
Early Minnesota Pharmacy, 331
- Miller, F. A.,
Recent Adulterant of Manaca, 591
Improvement of Medicinal Plants, 739
- Miller, F. A., and Baker, W. F.,
Potency of First-Year Cultivated Digitalis
Leaves Indicated by Physiological Assay,
198
- Mittlacher, W.,
Influence on Peppermint Oil by Cultivation,
530
- Mittelbach, W. M.,
The 1920 Pharmacopoeia, 38
National Association of Boards of Phar-
macy, 402
Reciprocal Interstate Registration, 621
See Sahm, L. N.
- Moerk, F. X., and Ehman, J. W.,
Assay of Some U. S. P. Chemicals, 155
- Morey, G. W.,
Benzoic Acid as Acidimetric Standard, 901
- Mortenson, F. E.,
Every-day Problems, 185
- Mosenthal, H. O.,
Use of Atropine, 778
- Motter, M. G., See Wilbert, M. I.
- Murray, B. L.,
Improper Containers, 446
- Nakai, C.,
Detection of Methyl Alcohol in Alcohol,
899
- Needham, R. H.,
Open Letter from Physicians Concerning
the Pharmacopoeia, 1260
- Newcomb, E. L., See Haynes, M. H.
- Nichols, T. B.,
Obituary, 808
- Nickel, E.,
Indicators of the G. P. V., 108
- Nielou, M.,
Iodic Acid for CO Determination, 377
- Niece, F. E.,
Bichloride Tablet, 951
Application of Tincture of Iodine in Sur-
gery and its Exploitation by Pharma-
cists, 1145
Decomposition of Neosalvarsan, 1540
- Nierenstein, M., and Stubbs, J.,
Action of Rennet on Milk, 263
- Nitardy, F. W.,
Practical Pharmacy Methods and Devices
314
- Noyes, A. A.,
Qualitative Analysis for Common Elements,
772
- Odell, A. F.,
Southern Cypress Oil, 527
- Oldberg, O.,
Obituary, 413, 550, 664, 666
Theoretical and Practical Pharmacy (book
review), 291
- Osborne, M. M.,
Packaging and Exploiting Cosmetics by
Retail Druggist, 1161
- Osborne, O. T.,
Plea for Useful Pharmacopoeia, 945
- Patch, E. L.,
Report of Committee on Drug Market, 1981
- Pearson, W. A.,
Quality of Drugs, 157
Physiological Activity of Acetic Fluorid-
tract of Digitalis, 593
Physiological Activity of Various Pharma-
ceutical Preparations of Ergot, 1453

- Pease, A. V.,
Advertising Retail Drug Business, 586
Chairman's Address—Section on Commercial Interests, 1267
- Pence, C. A., See Eldred, F. R.
- Perkins, R. A., See Hamilton, H. C.
- Pettit, H. M.,
Obituary, 807
- Pittenger, P. S., See Vanderkleed, C. E.
- Improved Form of Kymograph, 1498
- Pittinger, P. S., and Vanderkleed, C. E.,
Preservation of Ergot Preparations, 773
- Plitt, C. C.,
Pharmacopoeial Plants of Maryland, 1006
- Potts, T. H.,
Education and Legislation, 45
- Pratt, W. R.,
Bismuth Carbonate: Test for Nitrates and Commercial Quality, 105
- Prinz, H.,
Eau de Cologne, 641
- Pritchard, R. E.,
The Druggist and the Pay Telephone, 831
- Procter, W. J., Jr.,
Memorial, 1032
Report of Com. on Memorial, 1078
- Puckner, W. A.,
Commercial Calcium Phenolsulphonate, 642
Degree of Purity of Magnesium Peroxide, 643
Quality of Unimportant Drugs, 776
- Putt, E. B.,
Identification of Alkaloids, 900
- Raubenheimer, O.,
Chemistry of Aspirin or Acetylsalicylic Acid, 205
Antidote for Arsenic, 529
Official Table of Antidotes, 904
Preparing Camphor Ointment, 937
- Bethabara, 1501
- Centenary of Discovery of Iodine, 1547
- Redman, L. V., and Rhodes, E. O.,
Determining Phenol, 902
- Reichard, C.,
Cobaltine Reactions, 108
- Remington, J. P.,
Eleventh International Pharmaceutical Congress at The Hague, 1555
- Reum, A. W.,
Adulterations and Standard of Asafetida, 642
- Richter, W. F.,
Specificity of Biologics, 1006
- Rippetoe, J. R.,
Digestive Value of Papain, 901
- Roark, R. C.,
Mentha Citrata, 839
Wormwood Oil, 841
- Roberts, J. G.,
Impurities in Gelatin, 528
- Roberts, J. G., and Becker, M. M.,
Oregon and Canada Balsam of Fir, 982
- Roehr, C. M.,
Earning Capacity of Woman Pharmacist, 1285
- Roemer, J.,
Pharmacy of Oxycholesterin Ointment Bases, 97
Uniformity in Drug Standards and Uniform Requirements in Dispensing, 625
- Roon, L., (See Wimmer, C. P.)
- Rose, R. E., and Livingston, C.,
Leaf Oil of Wash. Cedar, 1004
- Rosenbloom, J.,
Tests for Acetone, 645
- Roth, G. B.,
Physiological Assay of Aconite, 705
- Rothenfusser, S.,
Determination of Saccharose in Foods, 378
- Rucker, W. C.,
Necessity for Exterminating Rats, 645
- Ruddiman, E. A.,
Examination of Medical Preparations, 1509
- Rupert, J. F.,
Practice of Medicine in China, 1572
Schools, State Boards and Prerequisites, 740
Chinese Pharmacy, 864
- Rupp and Schirmer,
Estimation of Iodides, 1002
- Rusby, H. H.,
Report of Committee on Drug Market, Aug., 1912, 677
- Sabouraud, R.,
Depilatory Property of Thallium, 377
- Sahn, L. N., and Mittlebach, W.,
Mercury Vapor Lamp for Bleaching, 676
- Saroger, J.,
Cremulæ or Chocolate Creams, 898
- Saas, S. K.,
Cataplasm of Kaolin, 697
- Sayre, L. E.,
Pharmacy in Kas., 191
Gelseminine and Possible Constituents, 436
Masse Ferri Carbonatis, 583
Correspondence Courses in Pharmacy, 743
Report of Committee on Drug Reform, 1075
- Schamelhout,
Return of Medicine Bottles to Pharmacies, 775
- Schneider, A.,
Micro-analytical Methods for Foods and Drugs Laboratories, 6
Pharmaceutical Plants and Culture (book review), 429
- Schneider, A., and Richter, R.,
German Pharmacopoeia, 900
- Scholtze, M.,
Alkaloids of Pareira Brava, 1001
- Schulze, L.,
Enforcing Pharmacy Laws, 745
- Schurmener, W.,
Kefir-fungus Conservation, 380
- Seoville, W. L.,
Tincture of Cantharides and Its Assay, 18
- Searby, W. M.,
Pharmacists, 989
- Semmler, F. W., and Mayer, E. W.,
Cedarwood Oil, 259
- Shannon, F. L.,
Deterioration of Spirit of Nitrous Ether, 83
Detection of Formic Acid in Fruit Juice Products, 901
- Shreve, R. N.,
Assay of Opium, 901
- Siedler, P.,
Bulgarian Rose Oil, 262
- Siegfried, K.,
Cultivation of Medicinal Plants, 1002
- Smith, C. E.,
Chemical Tests of U. S. P., 66, 498
- Smith, T. O., and James, C.,
Separation of Thorium, 711
- Snelling, W. O.,
Sulphide of Tellurium, 526
- Sollmann, T.,
Standardization of Drugs, 777
- Sperber, J.,
Water and Hydrogen Dioxide as Acids, 1001
- Splitzgerber, A.,
Oxydases, Catalases and Reductases of Milk, 898
- Steele, J. G.,
Pharmacists that I have Met, 989
- Sterling, C. M.,
Recognition of Powdered Drugs in 9th Revision of Pharmacopoeia, 304
- Stewart, F. E.,
What is Meant by Drug Standardization? 211
Teaching of Materia Medica, 776
Patents and Trade-Marks, 778
Report of P. P. A. Committee on Patents and Trade-Marks, 1149
Minneapolis Meeting of the American Medical Association, 1471
Suggestions Regarding Work of Scientific Section, 1496
- Stimson, C. E.,
Field for Women Pharmacists in Hospitals, 1288
- St. James, J. C. A.,
Obituary, 420
- Strujev,
Effect of Trypsin on Plants, 639
- Strzyzowski, C.,
Centrifuge Sediment Measure, 526
- Sullivan, C. D.,
Greeting to Women's Section, 1294

- Teeters, W. J.,
Chairman's Address, 1114
- Thompson, J.,
Effect of Federal Food and Drugs Act on
Wholesale Drug Business, 181
- Thurston, A.,
Is Castile Soap Synonymous With Sapo
U. S. P.? 854
- Thurston, A., and A. N.,
Ash and Moisture Constants of Powdered
Vegetable Drugs, 474
- Todd, A. R.,
U. S. P. and National Formulary in Rela-
tion to Food and Drug Laws, 1515
- Tower, J.,
Obituary, 419
- Trillat, A.,
Cause of Milk Turning Sour During Thun-
der Storms, 380
- Tucker, W. G., and Husted, A. B.,
Historical Sketch of Albany College of
Pharmacy, 1551
- Tyler, T., and Gosling, F. C.,
Toxicity of Methyl Alcohol, 106
Revision of Formulas for Formates, 107
- Vanderkleed, C. E.,
A. Ph. A. Commission on Proprietary Medi-
cines, 1469
- See
E'Ve, G. E.;
Glickman, L. H.;
Heidelberg, F.
- Vanderkleed, C. E., and Heidelberg, F.,
Glycerin Determination in Tooth Paste, 528
Determination of Glycerin in Suppositories,
529
Determination of Creosote in Tablets, 773
- Vanderkleed, C. E., and Pittenger, P. S.,
Variation in Susceptibility of Guinea Pig
to Heart Tonic Group, 558
Variation in Susceptibility of Frogs to
Ouabain, 822
- Vatter, A.,
Swiss Ergot of 1911, 629
- Verda,
Fats of Coffee, 641
Laminated Artificial Silk, 641
- Ville, J.,
Quinine, 108
- Wagner, E.,
Bismuth Soap, 899
- Wakeman, N.,
Phytochemistry in America, 1306
- Wall, O. A.,
Pharmaceutical Degrees, 428
- Wallace, G. B.,
Action of Drugs, 777
- Wallace, J. C.,
Report of Committee on National Legisla-
tion for 1912 and 1913, 1067
Is Prohibition of Methyl Alcohol in Prepa-
rations for External Use Only Justifi-
able?, 1263
- Wallis, T. E.,
Pre-existence of Calcium Oxalate in Leaves
and Formation of Calcium Tartrate in
Infusion of Senna, 379
- Walton, L. L.,
Legislation Relating to Preliminary Edu-
cation for Pharmacy Licensure, 179
- Warren, L. E.,
Activities of Am. Med. Assoc. and Value to
Pharmacists, 355
- Watson, G. N.,
Saponification of Fixed Oils Without Heat,
301
- Wenzell, W. T.,
And Phytochemistry in America, 1306
- Wendel, H. E.,
Obituary, 420
- West, F.,
Detection of Prussian Blue in Tea, 901
- Wetterstroem, T. D.,
Report of Committee on Local Branches,
1066
- Whelpley, H. M.,
Association Home, 513
Experiences of a Treasurer, 1049
Report of the Treasurer, 1051
- White, W. R.,
Pharmaceutical Notes, 939
- Whitfield, T.,
Obituary, 283
- Whittemore, C. F., and James, C.,
Quantitative Determination of Yttrium, 526
- Wilbert, M. L.,
Need for Uniformity in Laws Regulating
Sale and Use of Poisons and Narcotics,
309
Need for Restricting Interstate Traffic in
Habit-forming Drugs, 516
Useful Remedies, 776
Patents and Trade-marks, 777
1913 Meeting of the Am. Med. Assoc., 930
- Wilbert, M. L., and Motter, M. G.,
Digest of Laws and Regulations in U. S.
Relating to Use, Sale and Manufacture
of Poisons and Habit-forming Drugs,
(book review), 144
- Williams, J. B.,
Codeine in Commercial Morphine Sulphate,
81
- Wimmer, C. P.,
Chlorophyll, 350
- Wimmer, C. P., and Roon, L.,
Drop Weights, 1535
- Winters, O. E.,
Estimation of Iron in Reduced Iron, 296
- Wise, L. E.,
Refractive Index of China Wood Oil, 772
- Wood, H. C.,
Pharmacology and Therapeutics for Stu-
dents and Practitioners of Medicine
(book review), 141
- Woodruff, C. M.,
National Drug Trade Conference, 234
- Wulling, F. J.,
Minnesota Pharmacy, 331
Medicinal Plant Garden as Adjunct to Col-
lege of Pharmacy, 692
- Zimmermann, A.,
Rennin, 900
- Zuehlin, C.,
Science and the Sciences, 746

INDEX TO SUBJECTS

- A**
- Abies pectinata*
 volatile oil of seeds of, 256
Acacia, 963, 1083
Acetanilid, 1377
 adulteration and misbranding
 tablets, 915
Acetic ether, 680
Acetone, 678
 Soluble starch obtained by action of, 378
 tests for, 645
 alcohol, 899
Acetphenetidin, 363, 1377
Acetylbenzaconine, 705
Acetylation, for standardization of Indian
 hemp, 381
Acid, acetylsalicylic, microscopy of, 202
 chemistry of, 205
 acetic, 158, 965, 1377
 dilute, 1377
 glacial, 1378
 arsenious, 67
 benzoic, 860, 1378
 as acidimetric standard, 902
 Lagerheim's test, 6
 boric, 969, 1378, 1512
 as preservative for urine, 980
 curcuma thread, test for, 6
 citric, 860
 crystalline, from oleoresin of Digger's
 pine, 303
 gallic, 1378
 hydrochloric, 1378
 hydrocyanic dilute, 972, 1378
 hyphosphorous, 973, 1378
 lactic, 678, 1378
 nitric, 974, 1378
 nitrohydrochloric, 1378
 dilute, 1378
 oleic, 976, 1379
 phosphoric, 678, 977, 1379
 picric, 1379
 pyroligneous, 977
 salicylic, 1379
 in oil of wormwood, 841
 test, 6
 stearic, 1380
 sulphuric, 1380
 aromatic, 1380
 assay for, 900
 reduction of vanadic acid in, 1004
 sulphurous, test, 7
 tannic, 1380
 tartaric, 678, 1083
 trichloroacetic, 1380
 vanadic, reduction in sulphuric acid, 1004
 water and hydrogen dioxide as, 1001
Acidity, testing for gastric, of stomach, 334
 of milk, 899
Aconine, 705
Aconite, 685
 root, 163, 1083
 physiological assay of, 705
Aconitine, 705, 1380
Acridine, 1144
Activity, potential increase of, of medicinal
 mixtures, 111
Address, of Pres. William B. Day, 1025
 report of committee on president's, 1038
 of chairman of scientific section, 1109
 of chairman, W. J. Teeters, 1114
 of chairman, J. L. Lascoff, 1118
 of chairman, L. B. Havenhill, 1123
 of chairman of section on commercial in-
 terests, 1267
 of chairman of section on historical phar-
 macy, 1271
 of president of women's section, 1276
Adeps, 1380
 lanae, 1380
 lanae hydrosus, 1381
Adrenalin, patents, 383
Adulteration, 53
 of buchu, 1305
 Advertising, retail drug business, 586
 laws, 1529
 Agaric white, 1083
 Agave fibre, conversion into imitation horse
 hair, 256
 Albumin, estimation of, in urine, 154
 dried blood, 253
 history of reagents, 899
 Alcohol, amyl, test for tar colors in rasp-
 berry syrup, 111
 ethyl, influence of, on end-reactions, 108
 content of blood, 324
 denatured, 386
 alcoholic preparations, 386
 tests, 678
 influence of, upon toxicity of digitalis
 for guinea pigs, 836
 acetone, 899
 assay of, by evaporation, 1005
 tests, 1381
 absolute, 1381
 dilute, 1382
 in tincture of iodine, 1464
 methyl, toxicity of, 106, 775
 detection in pharmaceutical preparations,
 106
 toxic properties of, 643
 blindness from, 817
 detection, in alcohol, 899
 prohibition of, in preparations for ex-
 ternal use, 1263
 legislation, 1529
 Alcresta alkaloids, 1584
 Aletris, 250
 Alkaloids, determination of, in drugs, 107
 identification of, 900
 of pareira brava, 1001
 Alkanet root, 158
 Almond meal, 966
 Almond, drawback on lotion of benzoin and,
 117
 oil, 161, 974, 1397
 Almozoïn, 619
 Aloes, homonataloin in, 256
 improvement, 686
 Barbadoes, 864
 socoitrine, 985
 assay, 1083
 Aloin, examination, 963, 966
 tests, 1382
 Althaea, 1083
 Alum, dried, 967
 discolored, 1084
 Alumen, 1382
 dried, 1382
 Aluminum hydroxide, 1382
 Amendments, to constitution, 1200, 1214
 to rules of finance, 1204, 1214
 to constitution of women's section, 1291
 of by-laws, 765, 768
 American Druggists' Fire Insurance Com-
 pany, 1315, 1577
 American Medical Association, activities of,
 and value to pharmacists, 355
 1913 meeting of, 930
 Minneapolis meeting of, 1471
 American Pharmaceutical Association meet-
 ing, 925
 Ammonia, 32, 250, 504
 arom. spirit, 683
 water, 967
 spirit of, 1006
 Ammoniac gum, 1084
 Ammonium, composition of ichtyol- and some
 substitutes, 335
 acetate, solution of iron and, 1512
 benzoate, 1382
 bromide, 678, 1382
 carbonate, 1382
 chloride, 1382
 hypophosphite, 904
 ichthyosulphonate, 250
 iodide 967, 1382
 phosphate, 251

- salicylate, 1382
 - sulphide, vapor test, 8
 - valerate, 1382
 - Amygdonitrile glucoside, from leaves of
 Photinia serrulata, 110
 - Amyl nitrite, 1383
 - Analysis, standards and methods of, 307
 - cobaltinitrites in, 772
 - qualitative, for common elements, 772
 - boric acid as preservative for urine for, 980
 - of zinc ointment, 1143
 - see also Assay
 - Angelica root, 1084
 - Angostura, tonka bean, 863
 - Anise, 686
 - seed, 964, 1084
 - oil of, 974
 - Aniline dyes, 967
 - Annatto, 967
 - Anniversary of Chicago branch, 787
 - Anthraquinone green, 967
 - Antidotes, official table, 904
 - Antiformin method, examination of tubercu-
 lous sputum by, 640
 - Antimony, test, 8
 - and potassium tartrate, 158, 1383
 - sulphurated, 252
 - Antipyrine, 678, 1383
 - derivatives, 1000
 - Antiseptics, influence on intestinal flora, 644
 - Antitrypsin reaction, 640
 - Ants, medicinal use of, 525
 - Apiol, 967, 1085
 - green, 158
 - Apocynum, 685
 - Apomorphine hydrochloride, 1383
 - Apothecary, naval, since the civil war, 57
 - see also Pharmacist
 - Apotheker-Zeitung, Deutsche-Amerikanische,
 388
 - Apparatus, in pharmacy, 314
 - for handling hot evaporating dishes, 989
 - Apple vinegar compound, adulterating and
 misbranding, 914
 - Appropriations, budget for 1913, 131, 1217
 - Aqua caryophylli, 773
 - Aralia racemosa, 252
 - Arnica flowers, 1084
 - Arnica root, 678, 685, 1084
 - Arsenic, test, 8
 - antidote for, 529
 - exam. of tin foils for, 961
 - Arsenic iodide, 1383
 - Arsenic trioxide, 968, 1383
 - Asafetida, 31, 157, 678, 861, 968, 1085
 - vs. *Jaroma*, 365
 - assay of, tablets, 528
 - adulterations, 642
 - Ash, constants of powdered vegetable drugs,
 474
 - determination in vegetable drugs, 612
 - Asparagus seed, 1085
 - Aspirin, 679, 1085
 - microscopy of, 202
 - chemistry of, 205
 - Assay, of aconite, 705
 - aromatic sulphuric acid, 900
 - analysing medicines, 857
 - aspirin and acetylsalicylic acid, 208
 - belladonna, 434
 - benzoates, 156
 - by evaporation method, 1005
 - chlorates, 155
 - digitalis, 1002
 - emodin-containing drugs, 979
 - influence of size and shape of bottles on,
 pepsin, 1507
 - LaWall process, 1257
 - medicinal preparations, 1509
 - opium, 901
 - pepsin, 152
 - sanguinaria, 1300
 - some U. S. P. chemicals, 155
 - spirit of camphor, 900
 - uncture of cantharides, 18
 - potency of first-year cultivated digitalis
 leaves as indicated by physiological, 198
 - standards and, 307
 - standards for some biological standardized
 drugs, 146
 - see also Analysis
 - Association, national, of manufacturers of
 medicinal products, 337, 401
 - national, of boards of pharmacy, 402
 - program for 61st annual convention of
 Am. Pharm., 674
 - early history of Colorado Pharm., 703
 - meeting at Nashville, 811
 - women's work in, 1281
 - and opportunity, 1296
 - meetings of state, 1312
 - plan for membership campaign, 1329
 - Association home, 121, 388, 510, 513, 538,
 654, 1033, 1467
 - Atropine, 1383
 - use of, 778
 - sulphate, 1384
 - Auditing, report, of committee, 1063
- ## B
- Bacteria, microscopical examination of, by
 sunlight, 7
 - counts and cultures, 10
 - antiseptics and intestinal flora, 644
 - Bactericides, determining power of, 980
 - Bacterin treatment of typhoid fever, 1259
 - Balsam, 968, 969
 - of fir, of Peru, 862
 - fir, 982
 - Canadian, 1088
 - Peru, 1101
 - Tolu, 1107, 1384
 - Bank deposits, ownership of, 382
 - Barium dioxide, 253
 - Bay leaves, 1085
 - Bay rum, tax on, from Porto Rico, 913
 - Beauty talks and prescription fakes, 619
 - Beef extract, 1086
 - Beer, misbranding, 915
 - Beeswax, refractive index of, 772
 - Belladonna, 685
 - leaves, 164, 679, 964
 - leaves and root, 1086
 - production and valuation in Minn., 431
 - tinct., 683
 - stems, 969
 - Benzacoline, 705
 - Benzaldehyde, 1384
 - Benzin, purification, 1384
 - Benzoates, assay of, 156
 - Benzoin, 33, 164, 686, 969, 1086
 - drawback on lotion of almond and, 117
 - source and method of collection of Siam,
 378
 - Benzosulphinide, 1384
 - Beri Beri, rice-polishings a remedy for, 264
 - Berberis, 685
 - Betanaphthol, 1384
 - Bethabara, 1501
 - Bichloride tablets,
 see Mercuric chloride
 - Bills, composite, approved by conference, 634
 - see Legislation
 - Biologies, specificity of, 1006
 - Bismuth, test, 8
 - tablets, 364
 - soap, 899
 - betanaphtholate, 1384
 - carbonate, 105
 - citrate, 1385
 - subcarbonate, 1385
 - subgallate, 1385
 - subnitrate, 1385
 - subsaliolate, 1385
 - Bitters, misbranding of, 915
 - Bland's pills, permanency of, 905
 - Bleaching, mercury vapor lamp for, 676
 - Blindness, wood alcohol, 817
 - Blood, alcohol content of, 324
 - Blood pressure, standard for ergot, 1462
 - Blue, soluble laundry, 969
 - Boards of Pharmacy, 1036
 - Bone ash, 969
 - Borax, 860
 - Bottles, return to pharmacies, 775
 - explosions, 785
 - influence of size and shape of, upon assay
 of pepsin, 1507
 - Branches, proceedings and meetings of local,
 101, 541, 660, 761, 793, 919, 1031, 1066,
 1312, 1321, 1478, 1585

- Brandy, 969
 Bread, wrapping loaves, 535
 Bromoform, 1385
 Bromine, tests, 1385
 Brucine, B. P. test for, in strychnine, 109
 Bryony, 254
 root, 1087
 Buchu, 679, 686, 1087
 comp. tablets, 969
 recent, adulteration, 1305
 Budget, proposed budget of appropriations
 for 1913, 131
 for 1913, 1217
 Burdock root, 1087
 Bureau of chemistry enforcing food and
 drugs act, 398
 Burgundy pitch, 158, 679
 Business, sale of, 1474
 Butter, adulterated, 116
 By-laws, report of committee on revision of,
 751
 amendments, 1201
 amendments and suspensions, 765, 768
 of the council, 765
 of women's section, 1289
- C**
- Cacao butter, substitute for, 159
 Caffeine, 1385
 citrate, 1385
 and sodium benzoate, 1386
 Cajuput oil, 161
 Calabar bean, 164, 1087
 Calamine, 254, 679
 Calamus, 685, 1087
 Calcium bromide, 679, 1386
 carbonate, precipitated, 1386; see also chalk
 chloride, 679, 1386
 glycerophosphate, 163
 hypophosphite, 1386, 1512
 lactate, 107, 1386
 lactophosphate, 773
 oxalate, pre-existence of, in senna, 379
 phenolsulphonate, commercial, 642
 phosphate, precipitated, 158, 679, 1387
 sulphate, dried, 1387
 tartrate, formation of, in infusion of senna,
 379
 Calendula, 1087
 Calomel, 158
 see also Mercury chloride
 Calx, 1387
 chlorinata, 1387
 sulphurata, 1387
 Camphor, 679, 1387
 cultivation and preparation, 256
 determination, 527
 assay for spirit of, 900
 monobromated, 1387
 preparing, liniment, 937, 940
 spirit, 1106
 Candy cigars, adulteration, 915
 medicines, 95
 medication, 778
 Canella bark, 1088
 Cane sugar, see Sucrose
 Cannabis, American, 964
 Indica, 151, 158, 863, 1088
 sativa, physiological activity of, 22
 Cantharides, tincture of, and its assay, 18
 Chinese, 970
 Russian, 1088
 Cantharidin, drying residue of, 22
 Capsicum, 164, 1088
 Caramel, 969
 Carbonator, conditional sale of, 1474
 Carbon dioxide, volumetric determination, 527
 Carbon monoxide, iodic acid for, determina-
 tions, 377
 Cardamom, 964
 seeds, 686
 seeds and fruit, 1088
 tincture of, 1513
 Carmin, 254
 Cascarella bark, 1089
 Cassia, 1089
 Castor oil, 974, 1398
 Catalases, of milk, 898
 Catechu, 969
 Catsup, adulteration of tomato, 651
 Cedar oil, 1004
 chemistry of, 259
 Celandine herb, 1089
 Celery seed, 158, 1089
 Cellophan, for paper, 112
 Centenary of discovery of iodine, 1547
 Centrifuge sediment measure, 526
 Ceresin, 679
 Cerium oxalate, 1388
 Certificates, revocation of, 230
 Cetaceum, 1388
 Chairman, address of, section on scientific pa-
 pers, 1109
 address of, of section on education and
 legislation, 1114
 address of, of section on pharmacy and
 dispensing, 1118
 address of, of section on pharmacopoeias
 and formularies, 1123
 address of, of section on commercial in-
 terests, 1267
 address of, of section on historical phar-
 macy, 1271
 report of committee on, 1371
 report on address of, 1442
 Chalk, prepared, 1390; see also Calcium car-
 bonate
 Chamomile, 1089
 Champagne, misbranding, 115, 1475
 Charcoal, purified animal, tests, 970, 1387
 wood, tests, 1387
 Cheese, misbranding, 651
 Chemicals, assay of some U. S. P., 155
 effect of climate on, 600
 purity of, 162
 report of committee on standards for un-
 official, 1074
 standards for unofficial, 219
 Chemical tests of the U. S. Pharmacopoeia,
 66, 498
 Chemistry, Council on, 357
 Merck's report of advances in pharmaceut-
 ical (book review), 429
 and practical jokes, 1144
 Geschichte der chemie (book rev.), 1335
 Chemists, report of sub-committee on mem-
 bership of food and drug, 1073
 liability, 114
 Chenopodium oil in hookworm disease, 430
 Cherry bark, wild, 162
 Cherry cordial, adulteration, 651
 Chestnut leaves, 255
 Chichester's pills, 366
 Chicory root, 1089
 China, practice of medicine in, 1572
 Chinese pharmacy, 564
 Chloralformamide, 1388
 Chloral hydrate, 1388
 Chlorates, assay of, 155
 Chloroform, 159, 970, 1389
 development of heat on mixing with ether,
 378
 estimation, in chloroform liniment, 904
 Chlorophyll, 350
 Chocolate creams, medicinal, 898
 Chromium trioxide, 1389
 Chrysarobinum, 1389
 Cider, adulteration of apple, 651
 Cigarettes, laws, 1528
 Cinchona, calisaya and red, 164
 red, 686, 1090
 toxicity of alkaloids, 771
 Cinchonidine sulphate, 1389
 Cinchonine sulphate, 1389
 Cinchotoxine, conversion of cinchonine into,
 771
 Cinnamic aldehyde, 680
 Cinnamon, 1090
 powdered Ceylon, 1090
 Citronella oil, 161
 in geraniol, 259
 Climate, effect of, on various chemicals, 600
 Cloves, 1090
 oil of, 974
 Coal tar products, 1005, 1006
 Cobaltinitrites, analytical chemistry and, 772
 Coca, 164, 1090
 adulteration and misbranding, 915
 divine plant of the Incas, 1242
 leaves, 965
 users of Colombia, 1244
 Coca-cola, 532
 Cocaine, 1090, 1389
 unlawful selling of, 266
 sale of, 384, 1316

treasury decision regulation importation
and sale of, 1331
hydrochloride, 1389
Cocculus Indicus, 1090
Cochineal, 1090
Cocillana, 255
Code of rules and regulations of national
drug trade conference, 238
Codeine, 1389
in commercial morphine sulphate, 81
limit of, in morphine, 981
phosphate, 1389
sulphate, 970, 1389
Cod liver oil, 1398
Waterbury's, 364, 974
Coffee, roasted, 255
fats of roasted, 641
Cohosh, black, 1090
Colchicine, 1389
reactions, 108
Colchicum root, 164
root and seed, 1090
Colleges of Pharmacy, 1532, 1533, 1534
medicinal plant garden as adjunct to, 692
historical sketch of Albany, 1551
Collodion, cathartical, 1002
flexible, 1091
Colloids in medicine, 775
Colocyath, 680, 1090
Cologne, eau de, 641
Colorins, principle of cudbear, 51
Coltsfoot leaves, 1091
Commercial interests, address of chairman
of section on, 1267
minutes of section on, 1446
Commission, the A. Ph. A., on proprietary
medicines, 1469
Committee, 761, 766
on invested and trust funds, 1061
of women's section, 1290
see also Reports of committees
Cinchonine, conversion of, into poisonous
isomers, 771
Condurango bark, 1091
Confectionery, pure food law and, 115
Conference, national drug trade, 234, 238, 270,
628, 884
organization of national food trades, 1169
Congress, 11th international pharmaceutical,
at The Hague, 1555
Conium seed, 1091
Constitution, report of committee on revision
of, and by-laws, 751
of women's section, 1289
Containers, 446
Convallaria, standards, 147
Convention, 61st ann., of A. Ph. A., 674, 927,
1025
register of persons at 61st annual, 1238
th N. A. R. D., at Cincinnati, 1309
minutes of house of delegates, 1337
Cooperation, the life of trades and profes-
sions, 867
Copaiba, 862, 970, 1091, 1390
Copper, test, 8
carbonate, 159
Copper sulfate, 680, 1390
Coptis, 369
Copyright statutes, 907
Coriander, 1091
Corn starch, 1106
Corn-syrup, case, 1530
Cosmetics, packaging and exploiting, prepa-
rations by retail druggist, 1164
Coto, 686
bark, 1092
Cotton, for metal tests, 7
purified, tests, 1393
Cottonseed, meal, misbranding, 652
oil, 161, 682, 1397
Commurin, 369
Council, 757, 1598
Councl business, 129, 284, 420, 664, 804, 921,
1011, 1322, 1485
on medical education, 356
on pharmacy and chemistry, 357
on health and public instruction, 356
judicial, 356
election of members, 754
sessions, 767
proceedings of, 1212
report of sec'y of, motions of, 1216
Courtois, R., discoverer of iodine, 1547

Cremulae, 898
Cresol-acetic acids and some derivatives, 293
Creosote, 970
beechwood, 163
carbonated, 1390
determination of, in tablets, 773
effect of, on digestive action of pepsin,
pancreatin and diastase, 959
Creosotum, 1390
Cresol, 970
Critics of the propaganda, 87
Crocus, 686
Crystos, 620
Cubebs, identification, 110
oil of, 975
Cubeb, 161, 1092
Cudbear, 680, 963
uniform extract of, 47
red coloring principle of, 51
Cultivation of drug plants in the U. S., 851
of medicinal plants, 1002
Cumin seed, 1092
Curcuma test for boric acid, 6
Cure-alls, vile-smelling, 367
Cypress oil, 527

D

Damascenine in Nigella oil, 261
Damiana, 370
adulteration, of elixir, 651
Dandelion root, 1092
Deceased members, 1037
Decomposition of neo-salvarsan, 1540
Degrees, pharmaceutical, 438
Delegates, resolutions from house of, ap-
proved by Association, 1040
report of, to 1912 convention of national
federation of retail merchants, 1078
proceedings of the house of, of the A. Ph.
A., 1230
accredited to 61st annual convention of the
A. Ph. A., 1234
minutes of house of, 1337
Depilatory, thallium acetate as, 133
property of thallium, 377
Dermatol, 680
Deterioration of digitalis, etc., 876
of drugs, 950
of pharmaceutical preparations, 1109
Dextrin, 370
Diabetes, pancreatic origin of, 1155
Diacetylmorphine, 1390
hydrochloride, 1391
Diagnosis, ante-mortem conjectures and post-
mortem findings, 135
Diastase, 971, 1391
effect of paraformaldehyde, phenol and
creosote on digestive action of, 958
diet in epilepsy, 1108
Digestive action, effect of paraformaldehyde,
phenol and creosote on, of pepsin, pan-
creatin and diastase, 958
Digestive tablets, aromatic, 361
Digitalis, 1092
assay, 379, 640
duration of clinical action, 643
elimination or destruction of digitalis glu-
cosides by guinea pigs, 1559
Focke's assay of, 1002
keeping properties and preparations, 876
leaves, 159, 257
physiological activity of acetic fluid-
extract, 593
potency of first-year cultivated, leaves in-
dicated by physiological assay, 198
standards, 146
tinct., 683
Dioscorides, plants of, 525
Disease, interstate water and spread of, 645
disappearing, 1113
Disinfectants, 159
standardization of, 645
phenol coefficient method of testing, 955
Dispensing, address of chairman of section
on, 1118
by physicians, 1027
minutes of section on pharmacy and, 1410
uniform requirements in dispensing drugs,
625
Doctors, See Physicians
Dog grass, 1092
Drop weights, 1535

- Druggery of the druggery, 940
 Drug business, purchase of, 914
 Drug clerk, salesmanship and, 286
 Druggist and patent medicine from proprietary standpoint, 486
 and pay telephone, 831
 flood damage to, 555
 laws pertaining to unqualified drug vendors, 1527
 N. A. R. D. convention at Cincinnati—J. F. Pinneran, president, 1309
 on strike, 875
 packaging and exploiting cosmetics by retail druggist, 1164
 why do druggists receive so few prescriptions? 699
 Drug market, report of committee on, 677, 1081
 See also Markets
 Drugs, 386
 action of, 777
 advertising medicines and physicians, 496
 advertising of retail business, 586
 analyzing medicines, 857
 A. Ph. A. commission on proprietary medicines, 1469
 ash and moisture constants of powdered vegetable, 474
 ash determination of vegetable, 642
 buying synthetic remedies, 92
 candy medicines, 95
 chemists, 1073
 commercial samples of, 30
 deterioration of, 82
 determination of alkaloids in, 107
 distribution of, 266
 economic advantages in manufacture of galenicals by retail pharmacist, 1161
 examination of medical preparations, 1509
 examination results, 963
 formulas for foreign specialties, 530
 laboratory equipment for manufacture of galenicals by retail pharmacist, 1156
 Laws and regulations in U. S. relating to habit-forming (book review), 144
 market, 860
 medicinal mixtures, 111
 medicinal preparations, 386
 medicine of 300 years ago, 133
 micro-analytical methods for foods and drugs laboratories, 6
 National Association of Manufacturers, 397, 401
 need for restricting interstate traffic in habit forming, 516
 newspaper view of advertised medicines, 481
 official preparations, 530
 origin of well-known medicines, 702
 physiological testing of, 528
 powdered, 685
 purity of, 163
 quality of, 157, 776, 777
 recognition of powdered, in ninth revision of Pharmacopoeia, 304
 report of committee on reform of, 1075
 report of committee on standards for unofficial, 1074
 report of P. P. A. committee on, market, 965
 sale of stock of—rescission, 1317
 selection of, for the Pharmacopoeia, 945
 standardization of, 211, 777
 standards for biologically standardized, 146
 standards for unofficial, 249
 synthetic remedies, 775
 uniformity in standards and uniform requirements in dispensing, 625
 useful remedies, 776
 vegetable, as ranked by physicians, 1
 which deteriorate, 950
 Drug sales, 385
 Drug stock, 649
 Drug stores,
 early, in Vermont, 461
 old-time Brooklyn, 327
 separating the pharmacy from, 1120
 Drug trade,
 code of rules and regulations of national drug trade conference, 238
 national conference, 234, 270, 628, 1028
 and coal-tar products, 1005
 report of executive committee of national conference, 884
 Dry herb, 1092
 Dulcamara, 370
 Dyes, amyl-alcohol test for tar colors, 111
- E**
- Economy, in manufacture of galenicals by the retail pharmacist, 1161
 Editor of Journal of A. Ph. A., 756
 report of general secretary, 1042
 Education, address of chairman of section on, 1114
 American vs. European training in medicine, 184
 and legislation, 45
 council on medical, 356
 legislation relating to preliminary, for pharmacy licensure, 179
 medical, 777
 minutes of section on, 1417
 pharmaceutical, 1543
 of pharmacy student, 737
 progress in, 1532
 report of secretary of section on, and legislation for 1912-1913, 1518
 schools, state boards and prerequisites, 740
 When is it not education?, 176
 Egg albumin, 371
 Elaterium, 1391
 Elder root powder, 1093
 Elements, transmutation of, 105
 Elixir, iron, quinine and strychnine phosphates, 202, 939, 1004, 1142
 Elm bark, 971
 Emodin, improvement in assay of,—containing drugs, 979
 Employment, laws governing, 1529
 Emulsion, reversible reaction, 110
 synthetizing and hydrolyzing action, 263
 En-Ar-Co oil, 365
 Enzymes, descriptive definition for, 644
 Epilepsy, 1108
 Ergot, 159, 164, 685, 864, 1093
 fluidextract of, 381
 physiological activity of preparations, 1453
 preservation of preparations of, 773
 standards, 146
 Swiss, 1911, 639
 Ether, 971
 acetic, 680
 development of heat on mixing with chloroform, 378
 nitrous concentrated, 1093
 Ethyl carbamate, 1381
 chloride, 971, 1381
 Ethylmorphine hydrochloride, 1381
 Eucalyptol, 971, 1392
 Eucalyptus, oil of, 975
 solubility test, E. globulus, 183
 Australian, 258
 Eugenol, 1392
 Euphorbia pilulifera, 680, 684, 1093
 European tour of pharmacists, 1576
 Evaporating dishes, device for handling, 989
 alcohol assay by, method, 1005
 Evidence, intoxicating liquors, 116
 Examinations of State Board of Pharmacy, 1126
 Explosion, bottle, 785
 Extracts, See specific kinds as Cudbear, 47
- F**
- Fats of roasted coffee, 641
 Fatty acids, iodine number and separation of, in soap, 735
 Fennel, 1093
 Fermentation of fruit-juice, 648
 Ferments, proteolytic—action of light, 109
 yoghurt-glycobacterium, 264
 Fern extract, 681
 Ferri and ferrous compounds, See Iron
 Filtration of liquids containing precipitates, 776
 Finance, amendments proposed to rules of finance, 1204, 1215
 Fir, balsam of, 982
 Flaxseed, 1094
 meal, 680
 See also Linseed
 Flood damage to Ohio and Indiana druggists, 555
 Fluidextracts, 117
 Swiss, 1092

Fluid green, 967
 Fluids, international standards for colored, 76
 Fluorides, antidote for, 529
 Foenugreek, 1094
 Folia farfarae, 371
 Food, chemists, 1073
 Food and drugs act, 227, 382, 385
 Burr, of chemistry enforcing, 398
 Dunn's, Legal Manual (book review), 143
 duty to inspect food, 267
 effect on wholesale drug business, 181
 judgments under, 651, 914, 1318
 scope and application of Federal, 646, 782
 seizures under, 267, 535
 U. S. P. and national formulary in relation to, 1515
 violation of, 267
 Foods, determination of saccharose in, 378
 micro-analytical methods for foods and drugs laboratories, 6
 non-alcoholic drinks, 784
 Food trades conference, 1169
 Formaldehyde, 67
 assay of, 904
 ejecting tenant by means of, 116
 examination of commercial solutions and tablets, 106
 solution, 971
 test, 7
 Formates, revision of formulas, 107
 Formic acid, detection in fruit products, 901
 Formulary,
 national, 1034
 national, in relation to food and drug laws, 1515
 report of committee on national, 166, 1063
 U. S. P. and national, 173
 Formularies, address of chairman of section on, 1123
 minutes of section on, 1369
 Fremy's process for chlorophyll, 352
 Frogs, susceptibility of, to ouabain, 822
 Fruit ethers, 117
 Fruit juices, fermentation of, 648
 for wines, 111
 Funds, report of committee on invested and trust, 1061
 Fusel oil, 680

G

Galega herb, 1094
 Galenicals, See Drugs
 Gall-stones, 365
 Gambir, 969
 cubes, 160
 Gambose, 33, 165, 971, 1094
 "Gas-pipe" cures, 367
 Gelatin, 680
 impurities in, 528
 Gelseminine, and possible constituents, 436
 Gelsemium, 1094
 Gentian, 685
 root, 680, 1094
 Geraniol, direct estimation of, in citronella oil, 259
 Ginger, 165
 adulteration and misbranding Jamaica, 914
 root, 1094
 Glass, siloxide, 376
 Glucosides, elimination or destruction of strophanthus or digitalis glucosides by guinea pig, 1559
 Glycerin, 159, 680, 971, 1094, 1392
 determination of, in suppositories, 529
 determination of, in tooth paste, 528
 Glycyrrhizinum ammoniatum, 1393
 Gold and sodium chloride, 163, 1384
 test, 8
 Golden seal, See Hydrastis
 Goose grease, 160
 Granatum, 686
 Grenadine syrup, adulteration and misbranding of, 382, 915
 Guaiac, 33, 161, 680, 961, 972
 resin, 1095
 Guaiacol, 1393
 acetic acid, and some derivatives, 293
 carbonate, 1393
 Guarana, 165, 680, 861, 1095
 Guinea pig, elimination or destruction of glucosides by, 1559

influence of alcohol upon toxicity of digitalis for, 836
 susceptibility of, to heart tonic group, 558
 Gunpowder in medicine, 1091
 Gutta percha, 372
 Gutzeit's test for examination of tinfolils for arsenic, 961

H

Hair dyes, 365
 Handling, device for, hot dishes, 989
 Harrison bill, antinearcotic legislation, 137
 passes the House, 821
 objections to, 1489
 Health, council on, 356
 laws relating to public, 941
 Health service, revision of regulations, 271
 Health talks, 619
 Heart tonic group, susceptibility of guinea pig to, 558
 Heat, saponification of fixed oils without, 301
 Bellebore root, black, 1087
 Hemp, Japanese seed, 160
 extract of Indian, 381
 American, 1084
 Henbane, 165
 Henna leaves, 1095
 Heroin, growth of, habit, 627
 comparative doses of morphine and, 672
 Hexamethylenamine, 1394
 Historian, report of, 462
 Historical interests, minutes of section on, 1450
 Homonataloin, constituent of aloes, 256
 Homatropine hydrobromide, 1394
 Honey, 160, 972, 1396
 detection of cane sugar in, 987
 examination, 639
 identification and examination of medicated, 380
 purified, 1397
 Hookworm disease, chenopodium oil in, 430
 Hops, 1095
 Horse hair, imitation, from agave fibre, 256
 detection of artificial color and vegetable fibers, 776
 Horehound, 1095
 Hospital corps, banquet of sergeants of, 787
 Hughes-Bacon bills, 669
 Hospitals, field for women pharmacists in, 1288
 Hughes-Bacon bills, 669
 Hydrastine, 66, 1395
 Hydrastine hydrochloride, 372, 1395
 Hydrastis, golden seal, 164, 680
 alkaloidal strength of, 773, 972, 1095
 Hydriodic acid, 506
 Hydrocoerulignone, reactions of, 641
 Hydrogen dioxide, as acids, 1001
 Hydrogen peroxide, 972
 adulteration, 1316
 history of, 527
 not a medicine, 532
 oxidation of pyrogallol by, 899
 reduction of vanadic acid in sulphuric acid by, and persulphates, 1004
 solutions, 344
 Hyoscine hydrobromide, 66
 commercial variation, 108
 Hyoscyamus, 680
 tincture, 684
 leaves, 863, 964, 1095,
 Hyoscyamine hydrobromide, 1395
 Hypophosphites, compound syrup of, 85
 phosphoric anhydride content of simple and compound syrup of, 1505, 1512
 Hyssop, 1095

I

Ice cream, manufacture, 776
 Ichthyol-ammonium, composition of, and some substitutes, 335
 Incompatibility of aspirin, 209
 Increase, potential, of activity of medicinal mixtures, 111
 Indian gum, 160
 Indicators of G. P. V., 108
 experiments with extracts of bethabara as, 1502
 Infusions, concentrated, compared with freshly prepared, 381

- Infusorial earth, 680
 Inorganic substances, analyzing medicines for, 857
 Insect flowers, 1096
 Insecticides, national, act, 1531
 Insect powder, Dalmatian and Montenegrin, 257, 899
 Insurance, and sale of patent medicines, 1445
 Interstate traffic, need for restricting, in habit-forming drugs, 516
 Inula, 1096
 Iodic acid, for CO determinations, 377
 Iodides, effects of, 615
 volumetric estimation of, 1002
 Iodine, 66, 973, 1395
 centenary of discovery of, 1547
 determination of alcohol in tincture of iodine, 1464
 of thyroid glands, 263
 reaction, 7
 tincture, 514, 939, 1107
 tincture of, in surgery and exploitation by pharmacists, 1145
 Iodoform, 66, 1395
 Ipecac, 165, 681, 685, 1096
 false, from Colombia, 525
 Ipomoea, 1096
 Iris, 372
 Irish moss, 973
 Iron, 1392
 acid-proof composition, 775
 and ammonium citrate, 1392
 and quinine citrate, 1392
 tests, 8
 albuminate, 898
 carbonate, "massa," 583
 sweetened, 1392
 chloride solution, 681, 971, 1096, 1392
 determination in reduced iron, 296
 glycerophosphate, 371
 hydroxide with magnesia, 1392
 iodide, 597, 1004
 lactate, 160
 phosphate, 1004, 1142
 phosphates, elixir, 292
 phosphate, soluble, 1392
 pyrophosphate, soluble, 1392
 reduced, 681, 973, 1392
 solution of, and ammonium acetate, 1512
 subsulphate, 67
 sulphate, 681, 1392
 sulphate, dried, 971, 1392
 sulphate, granulated, 1392
- J**
- Jaborandi, 1096
 Jalap, resin, 162, 165, 681, 961, 1096, 1097
 Jaroma, asafetida vs., 365
 Jasmine, cultivation and yield of oil, 260
 Judgments under food and drugs act, 914
 Journal of A. P. A., 1033, 1047
 Juniper berries, 1097
- K**
- Kamala, 1097
 Kaolin, cataplasm of, 697, 973
 Keeping properties of digitalis and its preparations, 876
 Kefir-fungus, conservation, 380
 Kieselguhr, 681, 1098
 Kerosene, differentiation of, and benzin, 898
 Kino, 165, 973, 1098
 Klip buchu, as adulterant of buchu, U. S. P., 530
 Kola, 165
 Kraus' method for chlorophyll, 352
 Kymograph, improved form of, 1498
- L**
- Labels, varnish substitute for, 600
 Laboratory, equipment for manuf. of galenicals by retail pharmacist, 1156
 micro-analytical methods for foods and drugs, 6
 women in the pharmaceutical and scientific, 1287
 Lactose, 163, 489, 1406
 milk sugar, 1513
 Lactucarium, 1098
 Lagerheim's test for benzoic acid, 6
 Lard oil, 161
 Larkspur seed, 1098
 Lavandin, undesirable lavender-hybrid, 260
 Lavender flowers, 681, 1098
 lavandin an undesirable hybrid of, 260
 oil, 682
 tincture of, 1513
 LaWall, assay process, 1257
 Laws, anti-narcotic, 40
 enforcing pharmacy, 745
 federal net weight, 671
 need for uniformity in, regulating sale and use of poisons and narcotics, 309
 of U. S., relating to poisons, and habit-forming drugs (book review), 144
 pharmacopoeia and, 685
 pharmacy, past, present and future, 312
 relating to public health, 941
 See also Legislation
 Laxative, magnesium sulphate, 613
 Lead, acetate, 71, 1401
 carbonate, 374
 determination in chemicals, 106
 oxides, 375, 1401
 poisoning, 644
 subacetate, 67
 test, 8
 Legal decisions, 906, 911, 1315, 1530
 standards, 943
 Legislation, 1421, 1422
 address of chairman of section on, 1114
 education and, 45
 federal, in pharmacy, 622
 minutes of section on, 1417
 needed piece of, 5
 objections to the Harrison bill, 1489
 pharmacy, principles and objects of, 222
 proposed federal anti-narcotic, 137
 relating to education for pharmacy licensure, 179
 report of committee on national, for 1912 and 1913, 1067
 report of secretary of section on education and, for 1912-1913, 1518
 resolutions for, 1341, 1342, 1350, 1351, 1353, 1354
 See also Laws
 Lemon oil, 682, 860
 oil, valuation of, 261
 peel, color in, 939
 spirit, 683, 1106
 Lemongrass oil, Burmese, 261
 Leptandrin, 160
 Liability, druggist's, for clerk's negligence, 384
 managing directors, and intoxicating liquors, 116
 for sale of poisons, 1316
 License on oleomargarine, 115
 to sell medicines, 914
 Licorice, 1098
 powdered extract, 681, 973
 root, 1098
 Light, action of, on proteolytic ferments, 109
 Lily root, 1098
 Lime juice, 973, 1395
 Linaloe oil, 261
 Linalool monoxide, from linaloe distillates, 261
 Liniment, estimation of chloroform in, 904
 preparing camphor, 937
 Linseed, oil of, 975, 1398
 See also Flaxseed
 Liquor tax, 910
 laws, violation of, 1317, 1528
 Liquors, intoxicating, 116, 384
 misbranding of, 1317
 sale of intoxicating, 1316
 sale of, by druggists, 1316
 Lithium, 1002
 benzoate and other salts, 67, 68
 bromide, 1396
 carbonate, 1396
 citrate, 1396
 salicylate, 1396
 Lljfta, 639
 Lloyd's reagent, 1584
 Lotion, drawback on benzoin and almond, 117
 Lovage root, 1098
 Lung germe, 367
 Lupanine, dextrogyrate, 1001
 Lupulin, 165, 681, 1098
 Lycopodium, 34, 681, 1098
 substitute, 973

M

Magnesia, milk of, 973
mixture, 1141
Magnesium carbonate, 68, 1396
chloride, 372
citrate, effervescent, 973
oxide, 68, 1396
heavy, 1396
peroxide, degree of purity of, 643
salicylate, 684
sulphate, 160, 681, 973, 1396
laxative action of, 643
Mails, carrying medicine containing morphine, 648
Malt, 1396
powd. extract, 681
liquors, sales, 265
saccharine, adulteration and misbranding, 915
Manaca, adulterant of, 594, 964, 1099
Manganese citrate, 373
dioxide praecipitatum, 1396
glycerophosphate, 373
hypophosphite, 1396
oxide, 681
sulphate, 68,
Manufacturer, 534
Marjoram, 1099
Market, drug, 860, 965
Marks for distinguishing toxic tablets, 929
Marrubium, 686, 1099
Masticulating agents, 639
Matches, importation of phosphorous, 117
Materia Medica, restricted, 776
teaching of, 776, 777
Matteo, 686, 1099
Measures, 1120
B. P., 667
inspection of, 229
legislation, 1527
report of committee on weights and, 1251
U. S. P. standard, 903
Medical association, See American Medical Association
Medication, candy, 778
palatable, from manufacturer's point of view, 218
Medicine, colloids in, 775
education, 777
gunpowder in, 1001
Nobel prize, 778
practice in China, 1572
training in, 184
Medicines, See Drugs
Meetings, 758
at Nashville, 811
Minneapolis, of Am. Med. Assoc., 1471
of A. Ph. A., 1914, 791
Meiostagmin reaction, 640
Melaleuca oils, Australian, 259
Memberships, 113, 752
plan for, campaign, 1329
report of committee on, 1072
report of sub-committee on, of food and drug chemists, 1073
Memorial Wm. Procter, Jr., 1032, 1078
Menispermum, 374
Mentha citrata, 839
Menthol, 386, 861, 1397
Merchants, report of delegates to 1912 convention of National Federation of Retail Merchants, 1978
Merck's report, advances in pharmaceutical chemistry and therapeutics (book review), 429
Mercury, 1395
ammoniated, 1395
bichloride, 160, 951, 953
deadly tablet, 537
laws governing sale of, 1529
chloride, 8
corrosive, 1394
mite, 1394
with chalk, 1395
iodide, 67
red, 1394
yellow, 1394
nitrates, 67
oxides, red, 1394
yellow, 974, 1394
salicylate, 1394
vapor lamp for bleaching, 676

Metals, cotton threads for tests, 7
microscopical examination by sunlight -
Methylene blue, 684
Methyl salicylate, 68
Methylthionine hydrochloride, 68, 1397
Metric system, progress of, 112
Microscopy of aspirin and acetyl salicylic acid, 202
of ointments, 1134
Midol, 366
Migraine, No. 1, 681
Military service, pharmacist, 287
Milk, acidity of, 899
action of rennet on, 263
cause of souring during thunder storms, 380
ferments, 898
misbranding evaporated, 651
ordinance, 1476
sugar, 1099
See also Lactose
Mineral water, adulteration, 915
Mint, 117
Minutes of second meeting of National Drug Trade Conference, 629
Misbranding, 913
Missouri association, 658
Molecular weight of crystallin Kombé strophanthin, 613
Morals, standards, 943
Morphine, 69, 1397
acetate, 69
comparative doses of heroin and, 672
determination of in tablets, 774, 981
effect of age on, of opium, 380
hydrochloride, 1397
in smoke of opium, 643
limit of codein in, 981
mailable matter containing, 645
sulphate, 1397
codeine in commercial, 81
Mould counts, 11
Murine, 366
Mustard, 1099
black, 686
seed, estimating volatile oil in, 257
Myrica, 374
Myrrh, 32, 165, 682, 1100
gum, 974
powder, 974

N

Narcotics, federal anti-narcotic situation, 818
laws, 1170, 1524, 1525
need for uniformity in laws regulating sale and use of, 309
proposed federal anti-narcotic law, 40, 137
sale of, 781
Nashville, on to Nashville, 811
National formulary, See Formulary
Neo-salvarsan, decomposition of, 1540
Net weight, federal law, 671
Newspaper, view of advertised medicines, 491
Nicotine, in tobacco plant, 526
Nigella oil, synthesis of its alkaloidal constituents, 261
Nitrates, test for, in bismuth carbonate, 105
Nitrocellulose, preparation, 377
Nitroglycerin, 504
adulteration and misbranding, tablets, 915
solution, 163
Nobel prize, 778
Nomenclature, report of committee on pharmaceutical, 1079
Nominations, report of committee on, 1071, 1296
Nostrums, attitude toward, 1025
in Australia, 810
See also Drugs
Nuxia, 366
Nux vomica, 165, 682, 964, 1100
tablets, adulteration and misbranding, 915

O

Obituaries, 129, 277, 413, 549, 666, 807, 1483
Odorous compounds, formation and distribution of, in plants, 1561
Officers, election of, 754
Officialization unnecessary, 950
Oils, essential, 386
dispensing of, 476
hardened, 262

- optical rotation of essential, 110
 saponification of fixed, without heat, 301
 See also specific kinds as Olive Oil
 Ointment bases, pharmacy of oxycholesterin, 97
 Ointments, microscopic examination of, 1134
 Oleomargarine, license tax, 115
 Oleoresin, of *Pseudotsuga taxifolia*, 303, 1566
 crystalline acid from, of Digger's pine, 303
 Olibanum, 682
 gum, 1100
 Olive oil, 160, 975, 1398
 adulteration and misbranding, 914
 Olives, adulteration, 652
 Ononis root, 1100
 Opium, 163, 165, 385, 682, 860, 1100
 assay of, 901
 bill against distribution of, 889
 business and, traffic, 689
 deodorized, 905
 effect of age on morphine content, 380
 morphine in smoke of, 643
 smoking, manufacture of, 383
 taxation on, 1474
 tablets, 364
 tinet., 1005
 tincture of, deodorized, 1140
 tinet., deodorized or camphorated, 939
 Opportunity, association and, 1296
 Orange flavor, misbranding and adulteration, 651, 915
 oil, 975
 Order, rules of, 764, 768
 Organic substances, analyzing medicines for, 857
 Origanum, 1100
 Ouabain, susceptibility of frogs to, 822
 Oxcall, 682
 powdered, 976
 Oxidases, of milk, 898
 Oxycholesterin, pharmacy of, ointment bases, 97
 Oxygen, action of, 643
 compressed, 1398
- P**
- Panama hat fibers, structure of, 526
 Pancreatin, 682, 976, 1398
 effect of paraformaldehyde, phenol, creosote on digestive action of, 958
 quality of, on the market, 987
 Papain, 682, 862, 976, 1100
 digestive value of, 901
 Paper, cellophan, a cellulose product for impervious, 112
 Paraffin, 69, 1398
 Paraformaldehyde, effect of, on digestive action of pepsin, pancreatin and diastase, 958
 Paraldehyde, 70 1398
 Parcel post, 2
 regulations, 1531
 Pareira, 685
 alkaloids of, brava, 1001, 1101
 Paris green, law on, 230
 Parnotis, 620
 Parsley seed, 165, 965, 1101
 Patentee, cannot restrict re-sale prices, 906, 911
 Patent medicines, 365
 and the pharmacist, 425
 doctor, druggist and, from proprietary standpoint, 486
 effect of British insurance on sale of, 1445
 See also Drugs, Nostrums, etc.
 Patents, 77, 778, 906
 infringement of, 784
 report of P. P. A. committee on, 1149
 right to fix price, 911
 Peach cordial, misbranding, 651
 Pelletierinae tannas, 70, 1399
 Pennsylvania association, 658
 Pennyroyal oil, 161
 Pepper, black, 161, 1101
 red, 1101
 Peppermint, 160, 1101
 oil, influenced by cultivation, 530
 oil, 975
 oil, estimation of, in spirit of peppermint, 1504
 spirit, 683, 1106
 Pepsin, 1101, 1399
 assay and preparations, 152
 effect of paraformaldehyde, phenol and creosote on digestive action of, 958
 influence of bottles upon assay of, 1507
 insoluble, powd., 976
 labeling case, 1530
 scale, 976
 soluble, powdered, 976
 Perchlorates, quantitative determination of, 527
 Perfume, odorous products in plants, 1561
 Peroxide bleach, 976
 Persulphates, reduction of vanadic acid in sulphuric acid by hydrogen peroxide and, 1004
 Petrolatum, 1399
 album, 1400
 liquidum, 1400
 Petroleum, 976
 Pharmaceutical, arithmetic, teaching of, 576
 crooks, 145
 preparations, 386
 preparations, deterioration of, 1109
 preparations, methyl alcohol detection in, 106
 Pharmacists, 989
 activities of Am. Med. Assoc. and value to, 355
 and patent medicine, 425
 confidence of, in matter of prescriptions, 46
 congress of, in Poland, 775
 earning capacity of the woman, 1285
 European tour of, 1576
 exploitation of tincture of iodine by, 1145
 field for women, in hospitals, 1288
 in the government service, 1036
 Les Apothicaires Dieppoises du xiv au xvi siecle (book rev.), 1334
 military, 287
 status of, 777
 vs. plumber, 582
 Pharmacology for Students and Practitioners of Medicine (book review), 141
 Pharmacopoeia, 778, 1034
 address of chairman of section on, 1123
 and the law, 685
 Austriaca viii, 531
 B. P. weights and measures, 667
 chemical tests of the U. S. P., 66, 498
 critics of the propaganda, 87
 German, 900
 indicators of G. P. V., 108
 international, 874
 minutes of the section on, 1369
 open letter from physicians concerning, 1260
 physicians and, 572
 plea for useful, 945
 proposed changes for 9th revision, 1376
 recognition of powdered drugs in 9th revision of, 304
 report of committee on the U. S. P., 36, 1512
 scope of, 933
 the 1920, 38
 U. S. P. and National Formulary, 173
 U. S. P. as stepping stone to higher ideals, 700
 U. S. P. in relation to food and drug laws, 1515
 Pharmacy, address of chairman of section on, 1118, 1271
 amendments to Kansas bill, 541
 cause of commercial trend in, 450
 certified pharmacies, 776
 Chinese, 864
 correspondence courses in, 743
 council on, 357
 early Minnesota, 331
 education in, 737, 1532
 enforcing, laws, 745
 every-day problems, 185
 in Kansas, 191
 fifty years of, 1308
 historical sketch of Albany College of, 1551
 important dates in chronology of, 63
 in California in 1913, 1264
 international pharmaceutical congress at The Hague, 1555
 laws, 1522
 legislation relating to preliminary education for, 179

- minutes of section on, and dispensing, 1449
 national association of boards of, 492
 need of federal legislation in, 622
 notes, 929
 past, present and future laws, 312
 pharmaceutical degrees, 438
 practical methods and devices, 314
 principles and objects of, legislation, 222
 professional, 481
 reminiscences of, in the Rockies, 325
 report on progress of, 756, 1065
 section on historical, 540
 separating it from the drug store, 1120
 sneak thief in pharmaceutical ethics, 217
 state board of, examinations, 1126
 state board, limitations on power of, 792
 state boards, 710
 sterilization in, 905
 success or failure in, 1543
 Theoretical and Practical (book review), 291
 woman in, 994
 see also Drug store
 Phenacetin, 363, 682
 Phenol, 70, 977, 1400
 determining, 902
 effect of, on digestive action of pepsin, pancreatin and diastase, 958
 for determining bactericidal power, 980
 liquefied, 1400
 tablets, 364
 testing disinfectants, 955
 Phenolphthalein, 108, 1400
 Phenyllic salicylate, 70, 1400
 Phosphorus, 70, 1400
 anhydride content of syrup of hypophosphites, 1505
 Photinia serrulata, amygdonitrile glucoside from leaves of, 110
 Photography, micro-photography, 1134
 Physicians and advertised medicines, 496
 and patent medicine, 486
 and the pharmacopoeia, 572
 open letter from, concerning the pharmacopoeia, 1260
 values of vegetable drugs as ranked by, 1
 Physiological activity, of cannabis sativa, 22
 of preparations of ergot, 1453
 Physostigmine salicylate, 71, 1400
 sulphate, 71
 Phytochemistry, 724, 839, 841, 1566, 1569
 in America—W. T. Wenzell, 1306
 Pilocarpine, detection of, in presence of quinine, 108
 hydrochloride, 71, 1401
 nitrate, 71, 1401
 Pinkroot, 682
 Pinus sabiniana, crystalline resin acid from, 1569
 Pipsissewa, 682
 Pitch, Burgundy, 158, 679
 Pix liquida, 1401
 Plantoxine, 366
 Plants, activity of, medicinal, 525
 culture of drug, in U. S., 851
 effect of trypsin on, 639
 formation and distribution of odorous products in, 1561
 improvement of medicinal, 730
 medicinal, 1002
 medicinal plant garden as adjunct to college of pharmacy, 692
 Pharmaceutical (book review), 429
 Pharmacopoeial, of Maryland, 1006
 Podophyllin, 683, 977
 Poisoning, with common salt, 39
 Poisons, 383
 distinguishing marks for dangerously toxic tablets, 929
 Laws and Regulations in U. S. relating to (book review), 144
 need for uniformity in laws regulating sale and use of, 309
 sale of, 114
 sale of—liability, 1316
 Poliomyelitis, transmission of, 645
 Polyneuritis, prevented by alkaline substance of yeast, 264
 Poppy seed oil, 161
 Port wine, 524
 Postal laws, enforcement of, 1531
 Potassium, 683
 acetate, 1102, 1401
 and sodium tartrate, 1102
 arsenite, 67, 977
 bicarbonate, 1401
 bitartrate, 1401
 bromide, 1401
 carbonate, 112, 163, 683, 1402
 citrate, 1402
 dichromate, 1402
 ferrocyanide, 1402
 hydroxide, 1402
 increase in strength of, on standing, 301
 hypophosphite, 1402
 iodide, 1402
 nitrate, 683, 1102, 1402
 permanganate, 1403
 standardization by sodium oxalate, 771
 sulphurated, 1401
 tartrate, 158, 1513
 Precipitation, effect of vacuum preservation on, 980
 Prescriptions, confidence observed by pharmacists in matter of, 46
 fakes, 619
 kinks and hints, 1303
 negligence in filling, 266
 questionable, 231
 repeating, 35
 Preservation of spirit of nitrous ether, 209
 effect of vacuum, on precipitation, 980
 Preservative, boric acid as, for urine for analysis, 980
 President, 754
 address of, of women's section, 1276
 honorary president, A. B. Lyons, 1578
 Prices, protecting, 835
 patentee cannot restrict re-sale prices, 906, 911
 right to fix, 911
 Prizes, A. Ph. A. nomination, won by Brooklyn graduates, 1176
 Problems, some every-day, 185
 Proceedings, 1020
 national drug trade conference, 234
 of the council, 1212
 of house of delegates of A. Ph. A., 1230
 of local branches, 123, 272, 404, 541, 660, 793, 919, 1321, 1478
 Professions and cooperation, 867
 Propaganda, critics of, 87
 extension of, 101
 more about the, 120
 Protargol, 1102
 Prussian blue, detection of, in tea, 901
 Pseudotsuga taxifolia, oleoresin of, 303, 1566
 Publication, report of com. on, 1218
 Public health service, U. S., 805
 instruction, council on, 356
 Pulsatilla, 1102
 Pumice stone, 977
 Pumpkin seed, 1102
 Pyramidon, 644
 poisoning, 644
 Pyrogallol, 73, 1403
 oxidation by H_2O_2 , 899
 Pyroxylin, 74, 1403

Q

- Quassia, 1102
 Quebracho, 510
 Quillaja, 1102
 Quince seed, 1102
 Quinidine, 519
 Quinine, 108, 977, 1403
 alkaloid, 683
 and its salts, 74
 aromatic syrup of, 904
 bisulphate, 1403
 conversion of, into poisonous isomers, 771
 detection of pilocarpine in presence of, 108
 glycerophosphate, 520
 hydrobromide, 1404
 hydrochloride, 1403, 1404
 hypophosphite, 520
 phosphate, 1004, 1112
 elixir, 202
 salicylate, 1405
 sulphate, 977, 1405
 tannate, 521, 683, 1405
 trihydrate, 109
 Quino-quinol balsam, 641
 Quinotoxine, conversion of quinine into, 771

R

- Raspberry, amyl-alcohol test for syrup of, 111
 Rats, exterminating, 645
 Reactions, influence of ethyl alcohol and neutral salts on, 108
 Reagents, of albumin, 899
 tetramethyl base, 1003
 Red saunders, 683, 1103
 Reductases, of milk, 898
 Refractive index, of beeswax, 772
 of China wood oil, 772
 Register of persons at 61st annual convention of the A. Ph. A., 1238
 Registration, qualification for, 385
 reciprocal interstate, 621
 Remedies, buying synthetic, 92
 see also Drugs
 Rennet, action on milk, 263
 Rennin, 161, 977
 laboratory studies of, 900
 Report of auditing committee, 1063
 of committee on chairman's address, 1371, 1442
 of committee on drug market, 677, 1081
 of committee on drug reform, 1075
 of committee on local branches, 1066
 of committee on invested and trust funds, 1061
 of committee on membership, 1072
 of committee on national formulary, 166, 1063
 of committee on national legislation for 1912 and 1913, 1067
 of committee on nominations, 1071
 of committee on pharmaceutical nomenclature, 1079
 of committee on president's address, 1038
 of committee on Procter memorial, 1078
 of committee on publication, 1218
 of committee on revision of constitution and by-laws, 751
 of committee on standards for unofficial drugs and chemicals, 1074
 of committee on time and place, 1067
 of committee on transportation, 769
 of committee on unofficial standards, 248, 269, 519, 1514
 of committee on U. S. P., 1512
 of committee on weights and measures, 1251
 of delegates to 1912 convention of National Federation of Retail Merchants, 1078
 of executive committee of women's section, 1291
 of general secretary and editor of the Journal, 1043
 of historian, 462
 of meeting of executive committee of National Drug Trade Conference, 884
 of membership committee of women's section, 1293
 of national syllabus committee, 1080
 of nominating committee, 1296
 of P. P. A. committee on drug market, 965
 of P. P. A. committee on patents and trademarks, 1149
 of secretary of section on education and legislation for 1912-13, 1518
 of sub-committee on membership of food and drug chemists, 1073
 of the chairman of the A. Ph. A. committee on U. S. P., 36
 of the treasurer, 1051
 on the progress of pharmacy, 1065
 Rescission, 1317
 Resin, acid, crystalline, from *Pinus sabiana*, 1569
 scammony, 1103
 Resolutions, adopted by Denver branch of the A. Ph. A., 271
 Resolutions, adopted by Denver branch of the A. Ph. A., 271
 from house of delegates approved by the Association, 1040
 report of committee on, 1298
 Resorcinol, 162, 498, 1406
 Rhatany, 1102
 Rhubarb, 685, 905, 1102
 Rice polishings, remedy for beriberi, 264
 Roots, 1103
 Rosemary, 1103
 Rose oil, Bulgarian, 262
 Rosin oil, 162

- Roster of sergeants first class, U. S. army, 1581
 Rules and regulations of national drug trade conference, 238
 of order and debate, 764

S

- Saccharin, drawback on, 117
 Saccharose, see Sucrose
 Saffron, 162, 1103
 adulterant of, 775
 Saflrol, 1406
 Sage, 1103
 Sales, conditional, 534
 Salicin, 499, 1107
 Salicylates, assay of, 156
 Sal karolinum factitium, legality of name, 532
 Salophen, 683
 Salts, influence of, on end-reactions, 108
 see also Sodium chloride
 Salvia, 686
 Sambucus, 1104
 Sanatogen, 367
 case, 906, 1530
 Sandalwood, 1104
 oil of, 975
 Sanguinaria, fluidextract of, 162
 process of assay for, 1200
 proper time for collection of, 1302
 Sanguinarine nitrate, 977
 Sanitation, 1120
 inspection of drug stores, 228
 Santonica, 964, 1104,
 santoninless, 596
 Santonin, 499, 683, 1407
 in Turkestan, 109
 santonica without, 596
 Sapo U. S. P., 854, 1407
 Saponification of fixed oils, 301
 Sarsaparilla, Mexican, 1104
 root, 963
 Savory, 1104
 Scammony, resin of, 162, 683, 977
 root, 1104
 Science, 746
 Scientific papers, address of chairman of section on, 1109
 Scientific section, members of, 791
 minutes of section on, 1360
 suggestions regarding work of, 1496
 Scopola, 1104
 Secretary, 755, 756, 765
 report of general, and editor of the Journal, 1043
 Sediment, centrifuge, measure, 526
 Senna, pre-existence of calcium oxalate in leaves, 379
 adulteration of Alexandria, 651, 684
 siftings, 1105
 Seizure, mistaken, 784
 Sera, commercial variation of antidiphtheric, 525
 Sergeants, first-class, U. S. A., 1581
 Shampoo, liquid, 1537
 Silica, compound, 536
 tests for in soap, 735
 Silk, laminated artificial, 641
 "Siloxide," new kind of glass, 376
 Silver, nitrate, 1383
 fused, 1383
 ointment of colloidal, 898
 oxide, 1383
 test, 8
 Simaruba bark, 1105
 Sinkina, 117
 Smilax rhizomes, 1105
 Snake-root, 253
 Soap, 499, 977
 analysis of castile, 734
 bismuth, 899
 castile, and sapo U. S. P., 854
 hand paste, 898
 powdered, 1105
 toilet, 1537
 Soap bark, 1106
 Soda fountain, 265
 oral contract for sale of, 381
 explosion, 383

- necessity for acceptance of order for, 649
 conditional sale of, 1475
 taxation of, 266
 right to interest, 266
- Sodium**
 acetate, 1407
 and other sodium salts, 500, 503
 arsenate, 1407
 dried, 1407
 benzoate, 1407
 benzosulphinide, 1407
 bicarbonate, 905, 1408
 borate, 1408
 bromide, 162, 1408
 cacodylate, 1408
 carbonate, 735
 monohydrate, 1408
 chlorate, 1408
 chloride, 163, 1006, 1409
 poisoning, 39, 613, 614
 suicide by drinking solution of, 104
 citrate, 373, 1409
 cyanide, 1409
 formate, 107
 glycerophosphate, 521
 hydroxide, 163, 1409
 hypophosphite, 1409, 1512
 iodide, 1106, 1409
 nitrate, 1409
 nitrite, 1409
 oxalate, standardization of KMnO_4 solution by, 771
 perborate, 1409
 phenolsulphonate, 1410
 phosphate, 683, 1106, 1410
 dried, 1410
 solution of, 1513
 salicylate, 1410
 sulphate, 1410
 theobromine salicylate, 683
 thiosulphate, 1411
- Solubility test, *eucalyptus globulus*, 183
- Solutions, saturated, 903
- Sparteine sulphate, 503, 1411
- Spearmint, 1106
- Spigelia, 162, 685, 962
- Spirit of nitrous ether, 504, 527, 530, 1106
 deterioration, 83
 preservation of, 209
- Spurmax, 620
- Sputum, bacteriological examination of
 tuberculous, 649
- Squill, 1106
 standards, 146
- Stamp tax, payment under duress, 1315
- Standard blue, 77
 red, 77
 yellow, 77
- Standardization of drugs, 211, 277
 of Indian hemp by acetylation, 381
- Standards
 for biological standardized drugs, 146
 for unofficial drugs and chemicals, 249
 international, for colored fluids, 76
 legal and moral, 943
 of analysis, 307
 report of committee on unofficial, 248, 369, 519, 1074, 1514
 uniformity in drug, 625
- Starch, granules, 1002
 soluble, 378
- State board of pharmacy examinations, 1126
- Sterilization in the pharmacy, 905
- Stomach, testing for gastric acidity of, 334
- Stramonium, 165
 herb, 1106
 leaves, 1106
- Strike, druggists on, 875
- Strontium bromide, 504, 1411
 iodide, 1411
 salicylate, 1411
- Strophanthidin, 607, 618, 715
- Strophanthin, 505, 1411
 crystalline Kombé, 604, 715, 843
- Strophanthus, 165, 684, 1106
 decolorated tincture of, 713
 elimination or destruction of strophanthus
 glucosides by guinea pigs, 1559
 glucoside, 109
 standards, 146
- Strychnine, 505, 1411
 E. P. test for brucine in, 109
- glycerophosphate, 521
 nitrate, 1411
 phosphate, 1004, 1411
 elixir, 202
 sulphate, 1411
- Styrax, 1106, 1411
 benzoides, 378
- Success or failure in pharmacology, 651
- Sucrose, 498, 1406
 determination in foods, 378
 detection in honey, 387
- Suicide by drinking solution of salt, 104
- Sulphonethylethane, 505, 1412
- Sulphonmethane, 505, 1412
- Sulphur, 506
 dioxide, cure-alls, 366
 lotion, 1412
 precipitated, 1412
 sublimated, 1412
- Sunlight, microscopical examination of bacteria and metals by, 7
- Suppositories, determination of glycerin in, 529
- Surgery, tincture of iodine in, 1145
- Susceptibility, variation in, of frogs to anaesthetics, 822
- Suspensions of by-laws, 765, 768
- Sweet spirit of nitre, 939
- Syllabus, report of national committee, 1089
- Synthesis, buying synthetic remedies, 92
- Syrup, adulteration and misbranding, 914
 misbranding, 651
 of ferric iodide, 1004
 of hypophosphites, phosphoric anhydride content of simple and compound, 1505

T

- Tablet gum, 683
- Tablets, distinguishing marks for dangerously toxic, 929
 manufacture by the pharmacist, 550
- Talc, purified, 162, 1412
- Tannic acid, 158, 678
- Tannin, composition of, 1000
- Tansy, 1107
- Tape worm, thymol a remedy for, 643
- Tar colors, see Dyes
- Tariff, drug plant culture in the U. S., 851
 legislation, 1529
- Tax on bay rum, 913
- Taxation on smoking opium, 1474
 of soda fountains, 266
- Tea, 523
 Prussian blue in, 901
- Tecoma, 1502
- Tecomin, indicator, 1503
- Telephone pay, and druggist, 821
- Tellurium sulphide, 526
- Terebene, 506, 978, 1412
- Terpin hydrate, 506, 1413
- Terra alba, 980
- Terra silicea, 522
- "Tetramethyl base," reagent, 1003
- Thallium, depilatory property of, 377
 acetate as depilatory, 133
- Theobromine sodium salicylate, 1413
- Therapeutics, for Students and Practitioners of Medicine (book review), 141
- Merck's report of advances in (book review), 429
- Thiocol, 683
- Thorium, separation of, 771
- Thyme, 686, 1107
- Thymol, 507, 1413
 iodide, 507, 1414
 remedy for tape worm, 643
- Thyroid glands, iodine content of, 263
- Tiglii oil, 1398
- Tin foils, examination of, for arsenic, 961
- Tinctures, Swiss, 1002
 see also specific kinds as cantharides
- Tobacco, amount of nicotine in, 526
- Tomato paste, adulteration, 651
- Tonka beans, 524
- Tooth paste, glycerin determination in, 528
- Toxicity, influence of alcohol upon, of digitalis for guinea pigs, 836
 of cinchona alkaloids, 771
 of methyl alcohol, 106, 643
- Trade-marks, 777, 778, 784, 914
 report of P. P. A. committee on, 1142

Trade-names, 784
 Trade restraint, 534
 Trades and cooperation, 867
 Tragacanth, 684, 1107
 Transmutation of elements, 105
 Transportation, report of committee on, 769
 Treasurer, 755
 experiences of a, 1049
 report of, 1051
 Treasury decisions, 117, 268, 385, 650, 785
 regulating importation and sale of cocaine, 1331
 Triticum, 1107
 Trusts, anti-trust legislation, 1526
 Trypsin, effect of, on plants, 639
 Tubercle bacilli, transmutation of bovine, 424
 Turpentine, artificial, Venice, 162
 larch, 522
 oil, 161, 975
 Typhoid fever, bacterin treatment of, 1259
 carriers, 424

U

Unguentum zinci oxidi, manipulation of process for, 773
 Uranium nitrate, 1414
 Urine, boric acid as preservative for, 980
 estimation of albumin in, 154
 Uva ursi, 1107

V

Vacuum, effect or preservation from precipitation, 980
 Valerian, 1107
 therapeutic value of fresh, 258
 Vallet's mass, 583
 Vanilla extract, adulteration and misbranding, 915
 misbranding 914
 Vanillin, 508, 1415
 colorimetric estimation of, 902
 Varnish substitute, label, 600
 Vegetable extracts, analyzing medicines, 857
 Veratrine, 508, 1415
 Vermont, early drug stores in, 464
 Virburnum opulus, 1107
 Vienna lime, 160
 Vine, in culture and medicine, 639
 Vinegar, adulterated, 535
 adulteration and misbranding, 915
 misbranding, 652
 misbranding raspberry, 651
 Viruses, nature of filterable, 645
 Vitamine, 264

W

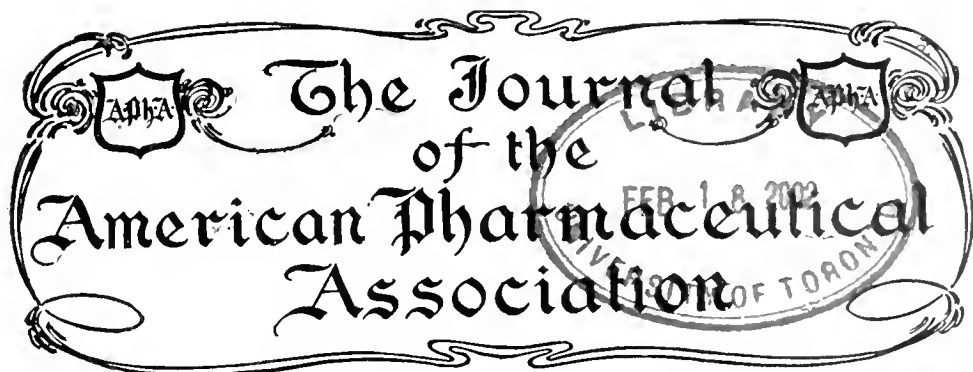
Washington association, 658
 Water, as acid, 1001
 constants of powdered vegetable drugs, 474
 distilled, in perfumery, 258
 interstate, and spread of disease, 645
 Water bath, electrical, 1561
 Wax, 684
 white, 1387
 yellow, 978, 1388
 Weights
 and measures, 1120
 B. P., 667
 inspection, 229
 legislation, 1527
 report of committee on, and measures, 1251
 U. S. P. standard, 903
 Wild cherry, syrup of, 1513
 Wines, from fruit juices, 111
 Wintergreen oil, 161, 682
 Women, work of, in the association, 1281
 in pharmaceutical and scientific laboratory, 1287
 Women's section, 269, 653, 1032, 1273
 greeting to, 1294
 proceedings and papers, 1273
 address of president of, 1276
 Wood alcohol, see Alcohol, methyl
 Wood oil, Chinese, 262
 examination of China, 772
 refractive index of China, 772
 Wormseed, 1108
 Worm syrup, Thacher's, 366
 Wormwood oil, 841

Y

Yearbook of A. Ph. A., 1219
 Yeast, counts, 10
 prevents polyneuritis, 264
 Yoghurt-glycobacterium, new milk ferment, 263
 Yttrium, quantitative determination of, 526

Z

"Zahlkammer," 1002
 Zinc, test, 8, 1416
 acetate, 1415
 and other salts, 508, 509
 carbonate, precipitated, 1415
 chloride, 1415
 ointment, quantitative analysis of, 1143
 oxide, 684, 1415
 phenolsulphonate, 1415
 stearate, 1416
 sulphate, 1416
 valerate, 1416



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THE VALUES OF VEGETABLE DRUGS AS RANKED BY PHYSICIANS.

SOME time ago, Prof. John Uri Lloyd undertook to determine the extent to which American Physicians are influenced by the authority of the Pharmacopœia in selecting the vegetable drugs employed by them, and also the order in which they considered them of value.

The results of these inquiries were set forth in a paper read before the section on Pharmacopœias and Formularies at the Denver Convention (see Nov., 1912, Journal, p. 1228), which presents statistical information that does not fit in well with doctrines which many of us had previously considered to be well established.

It is sometimes said that nothing lies like statistics, and that although figures will not lie, liars will figure, a rather crude way of expressing the fact that statistics are frequently so carelessly gathered as to be worthless as a source of information, or that they are sometimes so juggled as to apparently substantiate conclusions far removed from the truth.

In the paper under consideration, however, the figures seem to have been gathered with great, or even unusual care, and as far as we are able to judge from the context they have been fairly and honestly tabulated.

The sheets sent to physicians contained lists of the vegetable drugs upon which answers were required, and contained nothing that could have influenced those to whom they were sent to answer other than according to their own opinions as to the value of the drugs pronounced upon. That Prof. Lloyd endeavored to reach a list of physicians sufficiently large to be fairly representative

of the whole profession is evidenced by the fact that something like three thousand dollars was expended in postage alone. From the surrounding circumstances, therefore, we are justified in assuming that the figures in the tables fairly represent the consensus of opinion of practicing physicians of the country as to the value of the drugs passed upon. If any error is made in drawing conclusions from the results, the fault cannot fairly be charged to Prof. Lloyd.

The first surprise is reached when we examine the replies submitted by a selected list of physicians, none of whom were Eclectic, and in which the drug *echinacea* is given first place among valuable remedies, being ranked many degrees above such old pharmaceutical favorites as *nux vomica*, *digitalis*, *ippecac*, *cannabis*, *colchicum*, *colocynth*, *ergot*, *rhubarb*, and *senna*, while in the same list certain other official celebrities, as *columbo*, *guaiacum*, *jalap*, *cinchona*, and a number of lesser note, are thrown into the discard, not being favorably mentioned by a single physician who replied to the queries.

Some less prominent, or as many of us have been taught, quite unimportant drugs, as *bryonia*, *pulsatilla*, *cactus*, *chionanthus*, *thuja*, and even *dioscorea*, *collinsonia* and *crataegus*, are favorably mentioned with such frequency as to bring them well within the therapeutic "400," while others of undoubted respectability are either not mentioned at all, or are set away down toward the zero point in value.

If these answers had been furnished by Eclectic physicians alone, it might have been said that such vagaries were to be expected from the adherents of a sectarian school, but when the answers come from physicians whose regularity and orthodoxy are beyond doubt, we are moved to exclaim with Truthful James:

"Do I sleep, do I dream?
Do I wander and doubt?
Are things what they seem
Or is visions about?"

Nor are we able to extract any satisfaction from the list of drugs esteemed of value by Eclectic physicians. As was to be expected, some differences appear, but not sufficient to make any very material change in the list. On the whole there is a surprising similarity in the two lists; in fact, the Eclectics appear to be slightly more regular than the regulars themselves, since twelve of the first fifteen named Eclectics' favorites are U. S. P. drugs, while only eleven of the first fifteen named in the other list are recognized by that authority.

In the Eclectic list *gelsemium* is given first rank, and *echinacea* the fifth, an exact reversal of their positions in the non-Eclectic list, while *aconite*, *bryonia*, *macrotys*, *belladonna*, and numerous others occupy either the same or nearly the same rank in both lists.

In only a few cases is the difference in rank sufficient to be termed striking, the more notable being *podophyllum*, ranked 18 by Eclectics and 28 by the non-Eclectics; *ergot* ranked 22 by the Eclectics and 32 by the non-Eclectics; and *digitalis* ranked 24 by the Eclectics and 14 by the non-Eclectics. In the majority of cases the difference in rank in the two lists does not amount to more than

three to four points, certainly a remarkably close correspondence when we remember how doctors of different schools are reputed to disagree.

If Prof. Lloyd's work had stopped with these two lists, we might have adopted the hypothesis of a carefully hand-picked jury to explain the unexpected verdict and the placing of such therapeutic ragamuffins as *echinacea cactus*, et al., high above such old and undoubtedly respectable medicaments as *nux vomica*, *digitalis*, *ipsecac*, etc., but just as we are about consoling ourselves with this reflection, Prof. Lloyd springs another list compiled from over 10,000 replies to questions addressed to 30,000 physicians of all schools, widely distributed over the United States, and who are as perverse and unorthodox in their opinions as to the relative value of vegetable drugs as are the physicians who replied to the first two lists. In some respects it is a case of worse and more of it.

Cactus, which is placed in the 12th rank by the Eclectics and in the 9th rank by the non-Eclectics, is given first rank in the last list, being named as a valuable drug by 6239 out of 10,000 physicians who replied to the questions, a clear plurality of over 600 votes above *hydrastis*, the next most popular candidate.

Echinacea, however, is reduced to the 12th place, while twelve out of the first named fifteen drugs are official.

Many other equally striking anomalies—judged by our preconceived ideas—appear from a study of these lists showing the relative esteem in which the various vegetable drugs are held by practitioners, but for these the reader is referred to the original paper. As Prof. Lloyd says, "a study such as this leads to distractive confusion, and a shattering of ideals."

One conclusion which we think may safely be drawn, is that physicians are guided by their own experience in the selection of vegetable drugs, rather than by the recognition or non-recognition of such drugs by the *Pharmacopœia*, and also that having observed favorable clinical results from their use, they are not deterred from prescribing them by the fact that chemical examination has failed to show the existence of any definite active principle to which such favorable result could be attributed.

If physicians are to be credited with the ability to correctly interpret the results obtained in their daily practice, numerous teachers of *materia medica* and therapeutics need to make an early revision of their lectures and text books.

J. H. BEAL.



PARCELS POST UNDER THE ZONE SYSTEM.

THE beginning of the year witnessed the inauguration of the Government's experiment of parcels post under the "zone system," whereby the postage upon mail transported merchandise is, within certain limits, apportioned to the distance through which it is transported.

This, of course, falls far short of the desires of the advocates of the flat rate-for-everywhere plan, which, for example, would have enabled the New York mail order house to have delivered goods within ten miles of Seattle at the same rate as the Seattle retailer could have delivered them at the same place.

It was admitted on all hands that under the flat rate the Government would lose money on the long hauls, but it was claimed that the loss would be more

than met by the profit on the short hauls. Thus the practical result would have been to increase the profits of those who had a nearly complete monopoly of the long hauls (the big mail order houses in the cities) at the cost of those whose shipments were mostly short hauls—or the small retailers in the rural districts.

Unfortunately, many advocates of parcels post never took the pains to acquaint themselves with the true inwardness of the movement, and consequently were inclined to criticise the retailer for blindly standing in the way of cheaper and quicker methods of transportation. But the retailer was not as dull as his critics thought him. He was not opposed to the cheaper transportation of merchandise by mail, but only asked that the burden and profit should be equally distributed, so that those who shipped the longest distances should pay in proportion to the services received. In other words, he objected to a plan which, though seemingly for the benefit of all, was really a cunningly devised scheme that would have operated mainly to the benefit of a single class of dealers.

As it turned out, the retailers' opposition to the flat-rate plan was successful; in fact, almost too successful, since the rates finally established are, for distances beyond the first 50-mile zone, but little better than the prevailing express rates. This affords the advocates of the flat rate an opportunity to charge that parcels post is not being given a fair trial, and to press their original proposition, i. e., to carry parcels all distances at the same rates. Bills to make this change are still before the Congress, and are being pressed by the same powerful lobby that was behind the original movement. These efforts should be vigorously resisted until experience with the present form of parcels post enables us to determine what amendments are needed to make it an effective method for the transportation of merchandise, without becoming an instrument for the enrichment of a small but powerful group of special interests.

It will also be good policy for druggists to familiarize themselves with the present form of the plan, and utilize every opportunity for using it to the benefit of their own business.

The present rates are as follows:

	First Lb. or fraction	Each Additional Lb. or fraction	Limit 11 Lbs.
Rural Route and City Delivery.....	.05	.01	.15
50-mi. zone .....	.05	.03	.35
150-mi. zone .....	.06	.04	.46
300-mi. zone .....	.07	.05	.57
600 mi. zone .....	.08	.06	.68
1000-mi. zone .....	.09	.07	.79
1400-mi. zone .....	.10	.09	1.00
1800-mi. zone .....	.11	.10	1.11
Over 1800 mi.....	.12	.12	1.32

The limit of weight is 11 pounds, and the *combined* length and crosswise girth must not exceed 72 inches.

Poisons or habit-forming drugs, or preparations containing them in material quantities, intoxicating liquors, explosives or inflammable articles, and articles intended or adapted for immoral use are unmailable.

A NEEDED PIECE OF LEGISLATION.

MEMBERS of the American Pharmaceutical Association and pharmacists generally have now an exceptional opportunity to help materially a large and deserving body of pharmacists who constitute the personnel of the non-commissioned officers of the Army Hospital Corps. Several hundred of these army pharmacists are members of our Association. They are unfairly discriminated against both in rank, pay and in opportunity for advancement under the present constitution of the Army Hospital Corps. Our Association has undertaken to secure just and fair treatment for these men along the lines of the recommendations of the Surgeon General of the United States Army as contained in his memorandum to the chief of staff of August, 1911, and to this end has secured the introduction into Congress of the Hughes-Bacon bill, indexed as S. 5725 and as H. R. 22263, and now under consideration in the Military Committee of both Senate and House.

This bill was printed in the Journal and commented upon by Dr. George F. Payne, in May, 1912. Every member of the Association is earnestly requested to write at once to the senator from his state and the congressman from his district and urge the passage of the Hughes-Bacon bill. As this is a short session of Congress we must act quickly if we hope to accomplish anything. Do not put this aside, but write today to your congressmen and senators.

W. B. DAY.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

OUTLINE OF MICRO-ANALYTICAL METHODS FOR FOOD AND DRUGS LABORATORIES.

ALBERT SCHNEIDER, PHARMACOGNOSIST BUREAU OF CHEMISTRY, U. S. DEPARTMENT OF AGRICULTURE.

(Continued from p. 1338, December, 1912.)

There are a number of chemical tests giving color reactions which can be done conveniently by the micro-analyst, as the boric acid reaction with curcuma, the H_2SO_4 color reaction with some barks, capsicum, guaiac, resin, cubeb, etc.; the H_2SO_4 plus formaldehyde color reaction with morphine; the ferric chloride color reaction with salicylic acid; etc. These tests should be used when, in the judgment of the analyst, they may serve to give better information regarding the identity, purity and quality of the drug.

II. METHODS USEFUL IN THE EXAMINATION OF VEGETABLE FOOD PRODUCTS.

1. *Lagerheim's Test for Benzoic Acid.* Place a drop or two of the suspected liquid or semi-liquid food substance into a deep watch crystal of one inch diameter. Place over it a clean dry slide. Now hold the watch crystal over a flame (alcohol lamp*) until the substance (as wine, vinegar, catsup, jam, jelly, etc.), comes to an active boil. The steam vapor, carrying with it the benzoic acid, is condensed on the slide. Remove the slide and set it aside until the condensed moisture has evaporated; very moderate heat may be used to hasten evaporation. Examine under the microscope, whereupon the benzoic acid crystals may be seen, provided any were present. The test is delicate, very reliable and very few substances interfere with it. It is very pronounced in the presence of 0.01 per cent of benzoic acid or of sodium benzoate.

2. *Salicylic Acid Test.* Made like the benzoic acid test. The crystal formation (plates) is very pronounced in dilutions of 1 : 1000. After having examined the crystals under the microscope, add a drop of weak solution of ferric chloride to the crystals upon the slide, whereupon a blue coloration develops. Boric acid is likewise deposited by sublimation, but the test is not as satisfactory as those for benzoic acid and for salicylic acid.

3. *Curcuma Thread Test for Boric Acid.* Boil 5 grams of powdered curcuma in 10 cc. of alcohol. To the evaporated alcoholic extract add a little soda and several cc. of 50 per cent alcohol. In this place paper (bast fiber), cotton or linen threads and bring to a brisk boil for a few moments. Remove threads and dry between blotting paper, lay them in a very weak solution of sulphuric acid and rinse in water. When dry the threads should be a golden yellow.

The test for the presence of boric acid (also for borax) is made as follows: Dip the end of a prepared thread in a 10 per cent solution of hydrochloric acid and allow to dry. Lay

*Alcohol lamp is preferred because the flame is small and the heating is quickly done.

the thread on a slide, cover with cover glass and examine. It should be of a reddish brown color. To the edge of cover glass apply a droplet of a 10 to 15 per cent. solution of sodium carbonate, followed by a droplet of the suspected solution. In the presence of boric acid, the thread is colored blue, which coloration remains for a longer or shorter period and then changes to gray and violet. The test is a very delicate one and is not hindered by the presence of sodium chloride, magnesium sulphate and aluminum sulphate. Strong solutions of phosphoric acid, silicic acid, calcium chlorite and magnesium chlorite, interfere with the reaction more or less.

4. *Formaldehyde Test.* Concentrated hydrochloric acid added to weak solutions of formaldehyde (1 : 5000) or substances containing formaldehyde, forms stellate clusters having a somewhat crystalline appearance. The formaldehyde can be deposited on a slide by sublimation (as for benzoic acid) and the acid added. The stellate clusters appear upon evaporation of the hydrochloric acid. The test requires further verification to determine its value.

5. *Sulphurous Acid Test.* Moisten starch paper with a very dilute solution of potassium-iodide iodine solution which colors it blue. In the presence of the merest trace of sulphurous acid the paper is decolorized. Do not use heat in this test.

6. *Iodine Reaction.* The color reaction of starch with N/50 iodine solution is of great importance in the examination of fruit products, such as jams, jellies, catsups, etc., as it shows whether or not ripe or green fruits and juices of unripe fruit were used, and whether or not starch paste may have been added as a filler or thickening agent. As is known, green fruits generally contain more or less starch, whereas ripe fruits are quite free from starch. The reaction may be observed only in the fruit pulp cells, indicating the presence of unripe fruit, or it may be limited to the non-cellular portions of such substances as jams and jellies, indicating the use of fruit juices obtained from unripe fruits.

7. *Microscopical Examination of Bacteria and Metals by Direct Sunlight.* Some recent experiments would indicate that very minute quantities of certain minerals as iron, copper, mercury, and a few others, can be detected in liquids and semiliquids (in the form of metallic hydroxides) when examined (on slide mounts) by means of direct sunlight. All transmissible light must be cut off. The actual value of this mode of testing must be determined by further experimentation.

Direct sunlight can also be used in making bacterial counts in liquids, using the Thoma-Zeiss hemacytometer (Turck ruling). The bacteria are readily recognizable on the dark background, standing out far more clearly than in the usual examination by transmitted light, because of the more pronounced color contrasts.

The possibilities in the use of direct sunlight in microscopical work are very promising and should receive more serious consideration.

There are certain micro-chemical color reactions, other than those already mentioned, which are of great value in determining the presence of impurities or adulterants in liquids and semi-liquids. The methods as perfected by F. Emich depend upon the use of cotton fibers treated with certain chemicals which convert the metallic compounds into the sulphides. The prepared threads can be readily transferred to the several solutions used and the color and precipitation effects can be observed under the microscope. The following are the more important reagents and reactions:

1. *Cotton Threads for Metal Tests.* Dip absorbent cotton threads alternately into 15 per cent solutions of sodium sulphide and zinc sulphate, pressing between blotting paper, and air-dry each time.

The threads thus prepared should assume a deep black color with a 1 per cent solution of silver nitrate. They may be kept for a long time and are used to demonstrate the presence of As, Sb, Au, Pt, Cu, Hg, Pb and Bi, in various chemical compounds.

2. *Ammonium Sulphide Vapor Test.* Place a few fibers of absorbent cotton into a drop of the suspected solution and allow the moisture to evaporate. Suspending the threads in the vapor of ammonium sulphide will indicate the presence of Cd, Hg, Ag, Fe, Co and Ni (dark to black coloration).

The prepared threads are used in the following tests:

a. *Arsenical Test.* Dip a sodium sulphide thread into the suspected solution and allow to dry. In the presence of 0.008 per cent. arsenic there is a distinct yellowish coloration, due to the sulphide of arsenic formed in and upon the threads. The arsenical threads will also show the characteristic reactions with hydrochloric acid, ammonia and ammonium sulphide by bringing a drop of the reagent in contact with the thread upon the slide.

b. *Zinc Test.* Dip cotton fibers into the suspected solution, allow the moisture to evaporate, and then dip the threads into a solution of gold chloride. A violet coloration develops which remains in the presence of acids but vanishes in the presence of chlorine water, indicating the presence of zinc chlorite. The reaction is appreciable in the presence of 0.003 μ g of zinc chlorite, whereas in the form of the sulphite, 0.1 μ g of zinc are required to show the reaction.

c. *Antimony Test.* Dip a sulphide thread into the solution, allow to evaporate and expose to the vapor of ammonium sulphide. If the solution to be tested contains considerable hydrochloric acid, sulphide of antimony is formed upon evaporation. Inasmuch as zinc oxide is not precipitated upon the sulphide thread, simultaneous tests may be made for arsenic and antimony.

d. *Gold Test.* Gives a brown coloration with the sulphide thread, which disappears upon prolonged exposure to ammonium sulphide, more quickly on exposure to chlorine, bromine and sodium hypochlorite. The threads which have been decolorized with chlorine are colored blue to black with iron chlorite and violet to red with zinc chlorite.

e. *Silver Test.* A neutral or faintly acid silver nitrate solution gives a brown to black coloration with the sulphide thread, the depth of the reaction depending upon the concentration of the solution. The fibers can be decolorized by placing in sodium hypochlorite, and the color can be restored by means of zinc chlorite or an alkaline solution of grape sugar. Sulphuric acid will again decolorize.

f. *Mercury Chloride.* Cotton threads dipped into a solution containing mercuric chloride and exposed to the vapors of ammonium sulphide or ammonia, are colored black. The color is quite permanent in the presence of acids. A sulphide thread is colored yellow in neutral solution of mercuric chloride, changing to black in the ammonium sulphide vapor.

g. *Lead Test.* Neutral lead solutions (lead nitrate) turn the sulphide threads yellow and black on prolonged exposure to ammonium sulphide. In acid solutions the color reaction with the sulphide thread is black. The yellow coloration is promptly changed to black upon exposure to ammonium sulphide, or when placed in weak sulphuric acid (1:15). The latter reaction distinguishes between lead and mercury, as the yellow coloration of the mercury is changed very slowly with dilute sulphuric acid.

h. *Bismuth Test.* Solutions color the sulphide thread reddish-brown. Bromine causes the color to disappear. Potassium dichromate causes a yellow coloration, while alkaline solutions of zinc chlorite produce a black coloration. Lead solutions are not reduced by alkaline solutions of zinc chlorite.

i. *Iron Test.* Ammonium sulphide vapor gives a black precipitate which is soluble in weak solutions of hydrochloric acid. Potassium ferrocyanide gives a blue coloration.

j. *Copper Test.* Solutions of copper sulphate give a brown coloration to the sulphide thread, which color remains in 10 per cent. hydrochloric acid, but disappears on exposure to bromine vapor. The threads which have been bleached with bromine give the copper ferrocyanide reaction when placed in an acidulated solution of potassium ferrocyanide.

The following table from the work by Koenig gives the relative sensitiveness of the tests above described:*

Elements in Combination Valency	Reaction	Limit (mg x 10 ⁶)	Comparative Sensitiveness
Bo'''	Curcuma thread	0.1	1 in 33,000
As'''	Sulphide thread	10	1 in 2,500
Sb'''	Sulphide thread	1	1 in 40,000
Sn'''	Violet color with sulphide thread..	3	1 in 20,000
Au'''	Sulphide thread—brown, purple...	3	1 in 22,000
Pt'''	Sulphide thread	8	1 in 6,000
Cu'''	Sulphide thread+ferrocyanides...	8	1 in 4,000
Ag'	Sulphide thread+Ag...	5	1 in 22,000
Hg'	NH ₃ vapor.....	8	1 in 25,000
Hg''	Sulphide thread.....	5	1 in 20,000
Pb''	Sulphide PbCrO ₄	8	1 in 13,000
Bi'''	Sulphide+Chromate+Bi	8	1 in 9,000
Cd'''	(NH ₄ SH) vapor	6	1 in 9,000
Fe''	(NH ₄ SH)—blue	8	1 in 3,500
Co''	NH ₄ SH or Nitroso—beta—naph- thol	0.3	1 in 100,000
Ni''	NH ₄ SH	0.3	1 in 100,000

Certain factory food products, as jams, jellies, canned whole fruits, catsups, preserves, etc., generally contain large numbers of yeast cells, bacteria and mould. The examination of fruit products of the kinds named, as prepared by the careful housewife, shows that such organisms need not be present in any considerable numbers. Yeast cells, mould spores and bacteria occur in small numbers upon all sound fruits, but the active growth and development of the organisms does not take place in normal fruit. Decayed and decomposed fruit does contain large numbers of the organisms named, and active yeast fermentation is apt to be initiated in all exposed, non-sterilized and insufficiently sterilized fruit pulps and fruit juices.

Most of the factory samples of fruit products thus far examined, showed the presence of abundant yeast cells, mould and bacteria, indicating the use of fruit, fruit pulp, fruit refuse and fruit juices which were decayed prior to manufacture or which underwent fermentative and other decomposition changes prior to or during manufacture. Swollen cans are quite rare in the actual market, as they are culled at the factory before shipment. However, occasionally a swollen can finds its way into the pure food laboratory.

The organisms named prevail in varying amounts in different products. Bacteria are apt to predominate in catsups and pastes, yeasts in jams and jellies, moulds in such fruit as blackberry, strawberry, plums, rain-split cherries, apple

*The comparative degree of sensitiveness of the different chemical compounds concerned in the color reactions above described and tabulated, is indicated by the number of cubic centimeters in which one gramme of the substance in solution is still appreciable. The actual limit, determined experimentally, is indicated in terms of milligrammes, that is 1/1000 mg., represented by μ g. Expressing the comparative sensitiveness (CS) in a formula we have

$$CS = \frac{\mu\text{g limit}}{\text{amount limit}} \times \frac{\text{molecular weights}}{\text{combination valency}}$$

or to give the example for boron, we have

$$CS = \frac{0.000001}{0.00000006} \times \frac{59}{3} = 33000.$$

refuse and in fruit refuse generally; while smuts and their spores are particularly likely to occur in figs and fig jams. If these organisms (dead) occur in considerable numbers it is conclusive evidence that other than fresh fruits or fruit juices were used. The presence of numerous dead yeast cells (2-50,000,000 per cc.) is evidence that the material was undergoing alcoholic fermentation prior to or at the time of manufacture. Since yeast fermentations are usually accompanied by considerable bacterial activity, the presence of some bacteria may be expected. Occasionally a sample of jam comes to hand showing the presence of abundant living yeast cells, as indicated by the bulging of the can, and when opened, by the vinous odor, presence of bubbles, and as seen from the microscopical appearance of the actively budding cells.

Occasionally factory samples are found which are almost as free from organic contamination as are the products of the careful housewife, which is conclusive evidence that manufacturers can, if they will, put up wholesome fruit preparations. The following methods of making microscopic counts and provisional maximum limits are submitted for consideration:

1. *Yeast Counts.* The Thoma-Zeiss hemacytometer with Turck ruling, used with No. 2 ocular and No. 5 objective, will be found very convenient. It is not necessary to make dilutions. Countings can be made readily up to 50,000,000 per cc. without dilutions. If the yeast cells are so numerous as to require dilution, the article is presumably unfit for consumption. Three or four mounts of each fruit product should be examined, and ten areas (1/25 sq. mm. or 0.04 sq. mm.) should be counted in each mount.

Living yeast cells can be distinguished from the dead cells by their larger size, uncolored cell-walls, presence of vacuoles and evidence of active budding. Dead yeast cells shrink as the result of osmotic outflow of cell-sap, and the cell-walls take up some of the fruit colors, including slight coloration.

2. *Bacterial Counts.* As in yeast counts, the hemacytometer is used. The efforts to determine the presence of bacteria in fruit products and to count them, have thus far given rather unsatisfactory results because of the great variety of organic particles (as proteid and plasmic granules and minute starch granules), and even crystalline bodies, which may be mistaken for cocci or bacilli. The most satisfactory method is to centrifugalize from five to ten grammes of the substance dissolved in distilled water and make stained mounts of the sediment. Dead bacteria stain only slightly, organic non-bacterial fragments stain readily, whereas crystalline particles do not stain at all. The starch granules will, of course, be recognized by the blue coloration with N/50 iodine solution. The skilled microscopist has no difficulty in recognizing the larger bacilli in the various food substances provided they are present in considerable numbers (50,000 per cc. or more). Active motion of the suspected rod-shaped particles is, of course, conclusive evidence of the presence of living bacteria. The bacterial content of some substances, as tomato pastes, may be so high as to necessitate diluting. Usually a dilution of 1-10 is sufficient.

3. *Bacterial Cultures.* The only satisfactory method for determining the number of living bacteria in food products, including spore forms, is by means of the usual dilution plate cultures. For this purpose the necessary laboratory facilities must be provided. The full method should include the determination of certain pathogenic forms as the colon group of bacilli, the typhoid bacillus, and a few other objectionable types of bacilli. The maximum number of living bacilli (including spores) permissible in food substances will depend on the kind, and the limitations in that regard should be as for potable water, including mineral waters, following the methods outlined by the Society of American Bacteriologists. The purely quantitative or numerical limitations of non-pathogenic living bacteria will depend upon the character of the food substance. In jams, jellies, marmalades and similar products, the upper limit should not exceed 1,000,000 per cc., whereas in catsups the maximum number may be fixed at 5,000,000 per cc. This matter, however, requires further careful consideration.

4. *Mould Counts.* Mould in food substances is always objectionable, and the presence of such organisms usually indicates the use of mould-infested fruit, though the product may become further infested in manufacture or even after it is ready for shipment or while in storage. However, as moulds are highly aerobic, there is little growth in well-filled, well-sealed containers, but occasionally there is a very extensive growth on the top of the food product, as jam, jelly, etc., in containers which are not quite filled and which are not well sealed, or when the contents are insufficiently sterilized.

Since all species or kinds of moulds are objectionable, the maximum limits are purely numerical or quantitative. The methods of making counts consist in the use of a stage slide cell containing a definite amount of the well-mixed substance

Ruled Slide for Mould Hyphae (Not for Spores)	1	2	3	4	5	6	7	8
	9	10	11	12	13	14	15	16
	17	18	19	20	21	22	23	24
	25	26	27	28	29	30	31	32

FIG. 1.

Fig. 1. Ruled slide for counting mould hyphae in jams, jellies, canned fruits and similar substances. A small spoonful (capacity of 0.5 or 0.25 cc.) of the thoroughly mixed sample is spread on the slide, within the ruled area, and covered with a rectangular cover glass, or an ordinary slide. The counting is done by means of the low power (No. 2 ocular and No. 3 objective). Because of the amount of material placed on the slide, the dimensions of the areas and the low power used, spore or yeast cell counting is not practicable with this device. The mechanical stage will be very useful in making the counts.

and counting the number of hyphal fragments and hyphal clusters (including the spores) contained therein. The hemacytometer cannot be used. Attempts to use the Rafter counting device proved unsatisfactory, first, because of the depth of the cell (1 mm.), and because of the fact that the use of dilutions is necessary, which is time consuming. Several satisfactory methods may be used. By means of a spoon of 0.5 cc. or 0.25 cc. capacity, take up a well-mixed sample and spread it out on a slide ruled in numbered squares (Fig. 1), and cover with cover glass, and then count all of the hyphae direct, under the low power of the compound

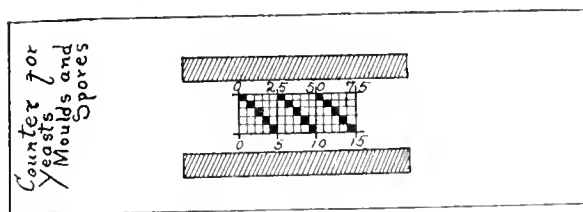


FIG. 2.

Fig. 2. Counting apparatus for mould spores, mould hyphae and yeast cells. The rulings on the slide are 0.04 sq. mm., 1 sq. mm. and 25 sq. mm. On either side of this ruled area are metal slips 0.2 mm. thick, so that the entire capacity of the space within the ruled area is 15 cm. or 0.015 cc. A bit of a thoroughly mixed fruit product, as jam, jelly or catsup, is placed on the slide in the ruled area and covered with a rectangular (No. 2) cover glass. Slight pressure is required to make the cover rest on the metal slips. The counting is done in areas entirely filled (from slide to cover glass) by the substance mounted. The larger areas (25 and 1 sq. mm.) will be most convenient for counting mould hyphae, while the smaller areas (0.04 sq. mm.) are used to count mould spores and yeast cells, provided the number present does not exceed 10,000,000 per cc. Should the number of yeast cells or spores exceed 10,000,000 per cc., it will be necessary to make dilutions (1-10). A No. 2 ocular and a No. 5 objective are to be used. If the spore count is to be omitted, only the low power (No. 2 ocular, No. 3 objective) need be used.

microscope. As a rough-and-ready method this is satisfactory, but the magnification used does not make spore counting possible. The mechanical stage is required when making the counts.

Quicker and more accurate countings can be made by means of a ruled slide cell, as shown in Figure 2. This device, furthermore, does not absolutely re-

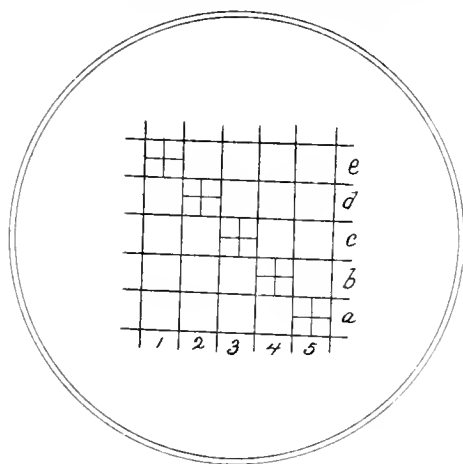


FIG. 3.

Fig. 3. Ocular scale for making yeast, spore and bacterial counts in liquids and semi-solids, as jams, jellies, catsups, preserves, etc. The measuring values of the areas (in microns or micro millimeters) of the squares, for low and high powers, are determined by means of the stage micrometer. Ordinary slide mounts are used, the amount of material being just enough to represent the approximate diameter of the yeast cell, spore cell or bacterial cell. That is, the cover glass must be pressed down sufficiently so as to bring it in capillary proximity to slide. In order to do this the amount of material placed on the slide or cover must be just enough or somewhat less than is required to occupy the capillary space between cover and slide. This precludes, from the mounting, all coarse material and larger solid particles, as sand, larger cells, as some sclerenchyma, etc. With some practice it is possible to make slide mounts in which the variation error does not exceed five per cent. The counts are made in one plane or optical section. The method is sufficiently reliable for all practical purposes and has numerous advantages, as will be found on comparing it with other methods.

The application of the method is as follows:

Let x = the linear value of the ocular rulings in terms of millimeters, and,

n = the number of yeast cells, spores, bacteria, etc., in x^2 , then

$n\sqrt{n}$ = the number of organisms in x^3 , and

$n\sqrt{n}$

$\frac{n\sqrt{n}}{x^3}$ = the number of organisms in one cubic millimeter, and

$\left\{ \frac{n\sqrt{n}}{x^3} \right\} 1000 = N$, N , representing the number of organisms in one cubic centimeter.

To give a concrete example we will suppose that with the high power $x = 0.09$ mm., and that based upon the counts of ten or more squares in each of the two or three mounts, $n = 10$;

then $10\sqrt{10} = 30+$, and

30

$$\frac{30}{0.000729} = 41,152, \text{ and } N = 41,152,000$$

quire the use of the mechanical stage, though it will be found convenient. The counting apparatus, shown in Figure 2, may be used with either low or high power (No. 2 ocular with either No. 3 or No. 5 objective). Because of the fact that the ends of the slide cell are open, cleaning is easy, and mounts can be prepared quickly. The use of the ocular scale and the direct slide mounts, as ex-

plained under Figure 3, is much simpler and quicker than the use of the Thoma-Zeiss hemacytometer, and gives results which are perfectly satisfactory for all practical purposes in the examination of food products.

The maximum number of yeast cells, moulds and bacteria permissible within the intent of the pure food and drugs act must be governed by several conditions. All products made from fresh fruits and fresh fruit juices, without the addition of fermentation products as fruit vinegar, wine, cider, etc., should not contain more than 1,000,000 per cc. each of yeast cells or of bacteria, and not more than 50,000 per cc. of mould spores and hyphal fragments and hyphal clusters. The fruit products of the careful housewife contain far less organisms than is indicated by these numbers. Apple butter or apple marmalade is sometimes prepared with fresh cider—that is, with apple cider which is undergoing active fermentation. Such a product may contain many more than 10,000,000 dead yeast cells per cc. If the cider is, however, first strained through several layers of muslin, through cotton or felt paper or cleared by the centrifugal method, before adding it to the apples, the number of yeast cells is in all probability far less than 1,000,000 per cc. In the above case the label should state that apple butter is "prepared with apple cider," as it is otherwise assumed that only unfermented fruit ingredients are used. Fruit products prepared with fruit vinegar, such as catsups, prepared mustards, etc., may contain 5,000,000 acid-forming microbes and yeast cells per cc., but in all probability not more, so that 5,000,000 yeast cells or bacteria per cc. is a reasonable maximum limit. No doubt this limit can be reduced as the canners learn the need of greater care in manufacture. Often the trouble lies in the fact that the decayed fruit is not carefully culled, and again the pulped material is left too long in the pulping or mixing tanks, or the tanks are not properly cleaned and scalded.

It is perhaps impracticable to cull out every decayed or mouldy fruit, but any one who has witnessed the operations in some of the fruit canneries is satisfied that conditions can be and should be improved upon. A careful culling of decomposed fruit would result in a marked reduction in the number of mould hyphae, mould spores, and rotting bacteria present. Manufacturers should be warned, and urged to perfect their methods, no matter what the cost may be. Improved methods no doubt would mean an increase in the price of the manufactured article, nevertheless we should have and we can have a wholesome fruit product.

The methods of micro-analysts whether in private, commercial or government laboratories, should be quite uniform. Much could be done to bring this about if the analysts were to meet for the purpose of comparing methods and results, as has already been suggested. Uniform blank report forms should be adopted and used in the micro-analytical laboratories, somewhat like those used by chemists. It cannot, however, be denied that the efficiency of the work done depends largely upon the ability, judgment and experience of the analyst. The novice is apt to experience only utter confusion, when left to himself, even when examining such simple substances as ground pepper, ginger, flour and starches. The beginner may worry over one article for an entire day, and even then he may not be certain of the findings, whereas the experienced analyst examines from twenty to

sixty samples in the same time with full confidence in his findings and conclusions.

The reports of the micro-analysts may be made according to the following groups:

- I. Drugs of vegetable origin, including dry or solid food products of vegetable origin.
- II. Liquid or moist food products of vegetable origin (canned and preserved foods generally).
- III. Bacterial examinations of liquids, etc.

There should be a special blank report card for each group of substances, arranged as follows:

FORM No. I.

No.....(I. S., Laboratory or other serial number).
Label
.....
Sample received..... Sample examined.....
Condition of wrappings and seals.....
Organoleptic Tests
 Consistency or Feel.....
 Color'
 Odor
 Taste
Adjunct Tests
 Sand (beaker test).....%
 Ash%
 Acid-insoluble ash%
Special tests
.....
Microscopical findings.....
.....
.....
Conclusions
.....
.....
.....Analyst.

FORM No. II.

(No. label, dates, condition of seal and organoleptic tests, as for form No. I.)

Adjunct Tests.
 Sublimation tests for.....
 Benzoic acid
 Salicylic acid
 Boric acid (curcuma thread).....
 Iodine reaction
 Intracellular
 Extracellular
Special Tests
.....

General	
Cytometric counts.	
Dead yeast cells.....	per cc.
Living yeast cells.....	per cc.
Bacteria	per cc.
Mould (hyphal fragments and hyphal clusters).....	per cc.
Mould spores	per cc.
Smut spores	per cc.
Conclusions	
Analyst.....	Analyst.

Bacteriological Examination.

- I. Direct Count. (Thoma-Zeiss Hemacytometer with Turck ruling.)
1. Bacilli per cc.....
 2. Cocci per cc.....
- II. Plate and Tube Cultures. (Lactose-Litmus-Agar).
1. Temperature differential test.
 - a. (20° C.) colonies per cc.....
 - b. (38° C.) colonies per cc.....
 2. Color differential test.
 - a. Pink or yellow colonies per cc.....
 - b. Not pink or yellow colonies per cc.....
 3. Gelatine liquefying colonies per cc.....
 4. Indol reaction (±).....
 5. Neutral red reduction (±).....
 6. Gas (hydrogen) formula.....
 7. Gram stain behavior (±).....
- III. Special Tests
- IV. Conclusions
- Analyst

We may give an example of a report as follows:

Lab. No 462.

Label: *Pure currant jelly. Made by Smith, Jones & Co., Nantucket, Wis.*

Sample received August 5, 1910. Sample examined August 5, 1910.

Condition of seals: *Good, unbroken sample.*

Organoleptic tests: *Not conclusive.*

Consistency or feel: *Poorly jellied.*

Color: *Normal for Currant jelly.*

Odor: *Faint, somewhat disagreeable.*

Taste: *Not characteristic, bitterish, quite acid.*

Adjunct Tests.

Sublimation tests for

Benzoic acid: *Negative.*Salicylic acid: *Very marked.*Boric acid (curcuma thread): *Negative.*Iodine reaction: *Very marked.*Intracellular: *Negative.*Extracellular: *Positive, very marked.*Special Tests: *Salicylic acid color reaction, with ferric chloride very marked.*

Microscopical Examination.

General. *Some apple tissue (window cells and pulp cells) and currant tissue (sclerenchyma) present. Added wheat starch about 5 per cent.*

Cytometric counts.

Dead yeast cells, 30,000,000.....per cc.

Living yeast cells, none.....per cc.

Bacteria, 6,150,000per cc.

Mould (hyphal fragments and hyphal clusters) 20,000*per cc.

Mould spores, 5,000.....per cc.

Smut spores, none.....per cc.

Conclusions: *Misbranded and adulterated with apple and with wheat starch and made from fermented and decomposed material, preserved with salicylic acid. Not fit for human consumption because of the quantity of yeast, mould and bacteria present.*

JOHN DOE, Analyst.

The great advantage of the micro-analytical work as compared with chemical work lies in the facts that small amounts of the substances are used for analysis, the equipment is comparatively inexpensive and the results are quickly attained. From twenty to forty and even sixty samples of simple spices can be examined in one day, from five to twelve samples of powdered vegetable drugs, cocoas, chocolates, flours, meals, etc., and perhaps an equal number of jams, jellies, etc.

Summarizing Suggestions.

The following concluding suggestions are submitted for consideration and action.

1. That there be a classification of those food and drug products which should be subjected to microscopical examination in food and drug laboratories.

2. That the compound microscopes intended for use in food and drug laboratories be equipped with eye-piece micrometer, polarizer, and four objectives (Nos. 3, 5, 7 and 1/12 in. oil immersion). The No. 5 being necessary for use with the mould counter and the hemacytometer, and the oil immersion objective for occasional bacteriological work.

3. That a mould counter, as described in Fig. 2, be adopted.

*This number of hyphal clusters and hyphal fragments would correspond with hyphal clusters and fragments in about 80% of the smallest areas (0.04 sq. mm.) of the proposed mould counting apparatus shown in Fig. 2. The comparative quantity of mould establishes the article's unfitness for human use to a more marked degree than does the yeast, although there are pathogenic and otherwise objectionable yeasts. Moulds are quite generally objectionable either on account of toxin-like substances formed or because of objectionable gases or flavors developed. Many of the moulds are pathogenic, producing skin and stomach disorders.

4. That a uniform tissue terminology be adopted.
5. That the micro-analysts adopt the following reactions and tests described in this report. Other tests to be added as soon as their value has been proven.
 - a. The mace test.
 - b. Conium test.
 - c. Grahe's cinchona test.
 - d. Ash determination.
 - e. Sublimation tests for benzoic acid and for salicylic acid.
 - f. Curcuma thread test for boric acid.
 - g. Iodine test for starch.
6. That organoleptic testing be recognized as valuable adjuncts to the microscopical examination.
7. That the micro-analytical laboratories be equipped to do the necessary bacteriological work.
8. That the micro-analytical laboratories be equipped to make official test-tube, beaker and other simple chemical purity and quality tests, recognized and described in the United States Pharmacopoeia, National Formulary and in the official methods of the Agricultural Chemists.
9. That a tentative maximum numerical limit for yeast cells, mould hyphae, mould spores and bacteria in food products and in liquids, be adopted.
10. The fineness of powdered vegetable drugs intended for medicinal use should be stated on the label. Powdered vegetable drugs of which the fineness is not in accord with the pharmacopoeial requirement, should be declared not up to the standard and should be rejected until the dealer reduces them to the required fineness.
11. Official vegetable drugs should be classified or grouped according to the maximum amount of harmless impurities (accidental impurities) which may be permissible, as follows:
 - Group or Class A.* Impurities not to exceed 5 percent.*² as ergot, kamala, lycopodium, some resins, gums, seeds, most fruits, ipecac, stem barks, some leaves, flowers, flowering tops, etc.
 - Group or Class B.* Impurities not to exceed 10 percent.*³ as some roots, rhizomes, some leaves, most herbs, etc.
12. That official descriptions be prepared of the official vegetable drugs, based upon microscopical characters, as indicated in this report and that these descriptions be supplied to micro-analysts to serve as guides in the critical examination of powdered vegetable drugs and as a means of unifying methods and results.
13. Uniform blank report cards for microscopical and bacteriological work should be adopted and used.

Revised to July 20, 1912.

*²Inclusive of inert material only as sand, pebbles, dirt, foreign vegetable matter, etc., not intentionally added.

*³It is probable that several exceptions must be allowed for this limit, as for example henbane and valerian, in which the impurities generally exceed 10%. However, in the great majority of drugs of this class the impurities need not exceed 10%, provided reasonable care is observed in collecting and garbling.

TINCTURE OF CANTHARIDES AND ITS ASSAY.

WILBUR L. SCOVILLE, DETROIT, MICH.

Two years ago I had the privilege of calling the attention of this Association to the onery character of cantharides and the deceitfulness of its tincture.

Further experiments on these bugs which are herein reported, again bear testimony to their bug-nature and irritating behavior and the "equally successful" results which are obtained when they are "extracted."

First let me remind you that the active principle of cantharides is cantharidin—a body of an anhydride character, and obstinate action—whose chief peculiarity, from a pharmaceutical standpoint, is its contrariness with solvents. Chloroform, acetone, benzol and acetic ether are its best solvents, but one is continually impressed with its indifference even to these. Chloroform dissolves it most readily, but while it is stated to be quite as soluble in acetone, yet it dissolves in this with exasperating slowness, and in acetic ether it is just as bad. Indeed, in any solvent which I have tried, satisfactory results are only obtained when the solvent is used warm, or the action is allowed to continue for prolonged periods.

A series of tinctures was made, representing 5 grams of drug in 100 cc. and with varying menstrua. All tinctures contained 5 cc. of glacial acetic acid in 1000 cc., which acid was used in the menstruum employed to moisten the drug, and was employed for the purpose of liberating the combined cantharidin in the drug. The drug contained 0.65 per cent. of cantharidin. Following are the results:

Menstruum	Process	Strength	Per cent. of exhaustion
No. 1 Alcohol	Percolation	0.0092% 0.010%	30
No. 2 { Acetone 50 { Alcohol 950	Percolation	0.012% 0.013%	38
No. 3 { Chloroform 50 { Alcohol 950	Percolation	0.018%	54.5
No. 4 { Acetone 100 { Alcohol 900	Percolation	0.014% 0.015%	45
No. 5 { Chloroform 100 { Alcohol 900	Percolation	0.014% 0.016%	45
No. 6 { Acetic ether..... 125 { Alcohol 875	Percolation	0.014% 0.016%	45

In all the above, maceration was continued 48 to 72 hours, then percolation was allowed to proceed very slowly, the final yield being obtained by pouring on alcohol. It will be noted that in the best tincture obtained the drug was but little more than half exhausted, and in this case the chloroform was all used in the preliminary maceration. But the tincture precipitated badly on standing, while No. 5, which was made with a mixed menstruum, remained clear.

No. 1 was made by first extracting the drug with petroleum ether to remove the

fatty matters, thinking that these might hinder the extraction with alcohol. The drug yielded 8.22 per cent. of fat and the fat showed a slight activity—producing a small blister on three of seven victim-volunteers after 12 hours' application, but no irritant effects in four hours in any of the seven.

Ten Per Cent. Tinctures. Nine of these were made and tested, as follows, all containing 0.5 per cent. of acetic acid by volume.

Menstruum	Process	Strength	Per cent. of exhaustion
No. 1 Alcohol	Percolation	.016 .020	27.7
No. 2 { Acetone 50 Alcohol 950	Percolation	.022 .024	37.0
No. 3 { Chloroform 50 Alcohol 950	Percolation	.0165 .0175	26.1
No. 4 { Acetone 200 Alcohol 800	Percolation	.0175 .0190	27.1
No. 5 { Chloroform 200 Alcohol 800	Percolation	.0165 .0180	26.1
No. 6 { Acetic ether..... 250 Alcohol 750	Percolation	.029 .031	46.0
No. 7 { Acetic ether..... 250 Alcohol 750	Digestion at 40° C.	.043 .047	66.0
No. 8 { Acetic ether..... 250 Alcohol 750	Digestion at boiling	.045 .047	66.0
No. 9 { Acetic ether..... 400 Alcohol 600	Digestion at boiling	.045 .050	74.0

What can one conclude from figures like these? Apparently alcohol is just as good a menstruum as mixtures of alcohol and chloroform, or alcohol and acetone, in spite of the fact that acetone and chloroform are good solvents for cantharidin, while alcohol is not. Again, it is noticeable that a quarter to a third of the cantharides is exhausted by cold percolation.

The one fact which stands out clearly in the above is that digestion is of decided advantage in extracting cantharides with alcoholic menstrea, and it is also evident that a short digestion at 40° C. is as effective as long boiling, since No. 7 was digested at 40° for 6 hours, No. 8 was boiled 6 hours, and No. 9 was boiled 12 hours.

Furthermore, this line of tinctures does not equal those reported in 1910, in which a menstruum of 10 per cent. glacial acetic acid and 90 per cent. of alcohol was used and which showed an exhaustion of 90 per cent, 76 per cent. and 88 per cent. by cold percolation, on three different drugs.

Some experiments were made with cantharidin to learn if an alkaline extraction would be likely to prove effective. It was found that alcohol containing ammonia

will dissolve cantharidin very slowly in tincture strength, requiring four to six days for solution. Potassium hydroxide will not dissolve cantharidin in alcohol in tincture strength, the potassium cantharidinate being almost insoluble in the fluid. These results did not encourage an attempt at alkaline extraction and none was made.

Furthermore, an alkaline tincture would not produce the blistering effects of cantharides when applied externally, and so would not truly represent the drug.

The first of the above tinctures were made from fat-free cantharides, obtained as before by extracting the fat with petroleum ether and drying the mass. This process undoubtedly removes a small portion of the cantharidin, but the loss is probably very small. Still, since it does not aid extraction materially, and the tincture itself shows no advantages in color, clarity or appearance, the method offers no advantages.

The different tinctures show small variations in color, but all remain practically clear, or with slight precipitation after eight months. The difference in odor is less than one might anticipate, since the heavy odor of cantharides stands out plainly in all menstrua.

With regard to the assay of the tinctures, it was found that evaporation on sawdust at a temperature not exceeding 40° C., then treating the sawdust as a drug, gave very low and erratic results. This may be due to remaining traces of acetic acid, which will not evaporate readily, or to slow volatilization of the alcohol, which may carry off some of the cantharidin. As with most volatile bodies, there is a greater loss on evaporating a solvent slowly, than with rapid evaporation. In order to test the process of assay which was finally employed, an artificial tincture was made by dissolving 0.1875 gm. of pure cantharidin in 2.5 cc. of glacial acetic acid and 10 cc. of chloroform and making up to 500 cc. with alcohol; 200 cc. of this solution should contain 0.075 gm. of cantharidin. There was actually obtained in four trials 0.077, 0.076, 0.078 and 0.077 gm. of cantharidin. Whether the excess was due to errors in measurement (ordinary graduated volumetric flasks being used), or to an obstinate occlusion of chloroform by the crystals, was not determined.

The assay of cantharides and its tincture offers one peculiar difficulty which makes it troublesome. The cantharidin must be obtained in crystals sufficiently large to permit of washing to remove fatty matters without loss, and yet the crystallization must be sufficiently rapid to avoid serious loss. Unless exposure in a warm place is very prolonged, serious loss is not likely to occur, but the container should be removed from heat soon after the last portions of solvent have disappeared.

A number of attempts were made to titrate cantharidin, treating it as an anhydride which yields a bibasic acid on hydrolysis. Solutions in alcohol, acetone and benzol, were made alkaline with an excess of semi-normal alcoholic potassium hydroxide, digested at different temperatures for varying lengths of time, then titrated with decinormal acid, using phenolphthalein as indicator. The acetone solutions gave all sorts of results,—due probably to the fact that acetone itself combines with alkalis, and alcohol solutions gave low and uneven results. The

benzene solution seemed more promising in a few instances, giving results close to 100 per cent., but constancy could not be secured, and the results were as likely to be nearly 20 per cent. high or low as to be nearer the truth, so this plan was abandoned. Other chemists have failed in attempting to estimate cantharidin by titration, yet it seems probable that if the proper conditions and solvents can be secured, it may yet prove to be a practicable method of estimation.

But thus far the gravimetric method of assay is decidedly the most satisfactory and with practice quite concordant results are obtained. The process which was adopted after trying several methods is a modification of the Self and Greenish method, and is as follows:

100 cc. of 10 per cent. tincture is distilled rapidly to near dryness under reduced pressure, and the residue is rinsed into a 250 cc. Erlenmeyer flask with small portions of distilled water, aided by a few drops of ammonia, and using 40 cc. of water in all. Ten cc. of strong hydrochloric acid is then added, a couple of capillary tubes dropped into the flask to prevent excessive bumping, and the mixture is boiled under a reflux condenser for about 15 minutes. The flask is then removed from the heat, and the hot aqueous liquid is sucked out from under its layer of fat with a pipette, taking care to remove as little of the fat as possible; 25 cc. of distilled water and a few drops of hydrochloric acid is added to the residue, boiled under the reflux condenser about 10 minutes and the aqueous liquid removed as before and added to the first. This process is repeated twice more, using 25 cc. of water each time, and obtaining about 125 cc. of combined liquid. This is cooled and shaken out with 30, 30, 20, 20 and 20 cc. portions of chloroform, and the chloroform filtered.

The combined chloroform washings are evaporated rapidly to about 10 cc. then set aside in a moderately warm place for the remainder of the chloroform to evaporate spontaneously and the crystals of cantharidin to form. When the chloroform has entirely disappeared (usually on standing over night), add a little ether and evaporate off the ether, preferably quickly. To the residue add 5 cc. of a mixture of equal volume of absolute alcohol and petroleum ether, which has been saturated with cantharidin, and rotate the container occasionally until the crystals are loosened and the fatty matters are dissolved. Pour the liquid through a small pledget of cotton, retaining the crystals in the beaker, add 2-3 cc. more of alcohol-petroleum-ether solution and repeat until the crystals are free from fat. Then dissolve the crystals in 5 cc. of warm chloroform and filter the chloroform solution through the pledget of cotton, receiving the filtrate in a clean tared beaker or flask. Wash the first flask (or beaker) and cotton with successive small portions of chloroform, then evaporate the combined chloroform washings rapidly, removing the last traces of chloroform with a little ether, dry the crystals at 40° for 30 minutes and weigh.

Conclusions: The writer has not yet succeeded in making a tincture which fully represents the drug, by any method or menstruum tried. Ordinarily, the drug is from one-quarter to one-third exhausted by percolation. By digestion from half to three-quarters exhaustion is obtained.

The use of 10 per cent. glacial acetic acid and 90 per cent. of official alcohol

(both by volume) has thus far proved the most efficient menstruum—tinctures made with this representing 80 to 90 per cent. of the drug used. Such a menstruum is, however, very strongly acid.

LABORATORY OF PARKE DAVIS & CO., DETROIT, MICH.

DISCUSSION.

F. R. Eldred stated that in his experience the best way to dry the residue of cantharidin was in a vacuum desiccator, at room temperatures, as there was practically no loss when it was dried in this manner, and it was very easy to get rid of the solvent.

Charles Caspari, Jr., said he hoped that Mr. Scoville would continue his work with cantharides and the different solvents, and give the Association a table of his experiences. If, with the present methods, only one-third of the cantharidin was extracted by percolation, it showed the absolute necessity of some general, improved formula.

THE PHYSIOLOGICAL ACTIVITY OF CANNABIS SATIVA.

Comparison of Extracts from Indian and American-grown Drug Upon Human Subjects.

H. C. HAMILTON, A. W. LESCOHIER, R. A. PERKINS.

It has been claimed by various investigators that the common hemp (*Cannabis Sativa*) grown in the United States contains the same active constituent as is found in *Cannabis Indica*, the name of the official drug which is grown in India. Botanists do not distinguish between the two, the plant being identical wherever grown.

The fact that the Indian grown drug was used in all the early accounts of its intoxicating action may have led to the belief that the peculiar climate of India is accountable for the presence of an active constituent not normally present in the plant.

No recorded data have been advanced, however, to substantiate the claim that drug grown elsewhere does not contain such constituents. On the other hand Wood (Proc. Am. Phil. Soc., Vol. XI, p. 226), Houghton and Hamilton (Am. Journal of Pharmacy, Jan., 1908), True and Klug (Proc. A. Ph. A., (1909), True (Am. Journ. of Pharmacy, Jan., 1912), and Hamilton (Am. Jour. Pharmacy, March, 1912), have submitted the drug to careful pharmacological tests, and report that extracts from American grown drug are no less active than those obtained from India.

Dr. H. H. Rusby raised the question whether the test for activity on dogs can be accepted to prove its activity as a therapeutic agent.

Much of our knowledge of the action of drugs is obtained by observing their effects when administered to animals. The physiological action of almost every powerful drug is so characteristic as to be almost unmistakable to an experienced observer. Any one who has observed the characteristic effect of *Cannabis Indica* on susceptible dogs, symptoms which almost invariably appear in an hour after administering one to two grains of an active extract, and then has observed the same effect from an equal dose of an extract from the American drug, is inclined to accept it as proved that the two are identical.

The question raised by Rusby is, however, very pertinent and logically calls for proof of a different character. A series of experiments was therefore outlined which, it was hoped, would throw light on this much mooted question. To make a complete experiment it was decided that three persons would co-operate, each in turn, one taking the same quantity of each lot of drug, while two would remain normal to observe its effect.

There is not much of interest in observing the effect of the drug on others, since its action is more mental than physical. One's own description, if it could be recorded at the time, would mean much more than that of others. The subject, however, is not in a condition at the time to record these observations and if of a nervous disposition needs the presence of companions. Otherwise drowsiness is often the most characteristic effect of the drug.

The evening was taken for these experiments partly to give opportunity for sleep immediately afterwards and partly to have everything quiet with no disturbing affairs going on to distract attention.

One of the three (Hamilton) had on a previous occasion taken two grains of an active extract *Cannabis Indica* and was, to that extent, familiar with its action. On that occasion there were developed some disagreeable symptoms but nothing serious.

Nausea and vomiting occurred which were magnified by the imagination to an extent that was far from pleasant. Therefore, to duplicate conditions as nearly as possible the capsule containing 2 grains extract *Cannabis Americana* was taken at 5:30, followed by dinner at 6 o'clock.

EXPERIMENT I.

He relates his experience as follows:

About one hour after taking the drug a pleasurable sensation was experienced which can be described only as one of well-being and complete satisfaction. This was marred to an extent by the dread that the trip to the laboratory might not be entirely comfortable and that in the street car or on the street my behavior might be ridiculous without the cause being known. The walk to the car, the two-mile ride and several blocks' walk to the laboratory, seemed interminable, although no unpleasant feelings were experienced during the trip. One other fact was observed, namely, the difficulty in holding my mind on one subject long enough to express my thoughts.

About two hours after taking the drug, an uncomfortable feeling was experienced, followed shortly by nausea and vomiting. Several ideas impressed me strongly; I had a morbid fear that some one other than my associates would observe me, also that the effect of the drug on me would deter the others from taking it. I was opposed to doing anything and wished most earnestly for a comfortable seat or bed. A feeling of constriction and dryness in my mouth and throat was observed. Later a feeling of depression and drowsiness followed and I appeared to sleep. Whether I did or not is uncertain as I thought I remained conscious all the time. I knew that something in my condition was decidedly abnormal because of comments made by the observers, but I didn't know nor care what it was.

About four hours after taking the drug I felt much better and aroused entirely from my drowsy state. On the trip home I dozed off on several occasions but for only a few minutes each time. A comfortable night's sleep followed and no unpleasant after effects could be noticed.

The result of this experience convinced me that no difference could be detected in the action of extracts from Indian and American hemp, for, although in the former experiment there were several phases which did not appear in this one, the general effect was identical in each case. On the former occasion all the peculiar sensations were more vivid, time dragged more slowly, the nausea was greater, even suggesting the fear of death, the constriction in the throat was so great as to suggest choking to death, there was a greater willingness to give free rein to my imagination and to relate experiences and therefore greater difficulty in keeping the mind on one subject at a time. These differences were, however, in degree and not in kind and may be explained in part by my having become familiar with the drug and descriptions of its effect on others.

L's Observations on Subject H. Ex. I. About 6:30 H began to manifest a certain amount of uneasiness and difficulty in concentrating his thoughts. Coming from down town to the laboratory it was observed that he seemed to be more or less worried and to lose to a certain extent, sense of time, expressing the feeling that we had consumed an hour coming from down town, whereas the time for the trip was not more than ten or twelve minutes.

The laboratory was reached at 7:00 and H. expressed a strong desire to lie down or become ensconced in a comfortable chair. From 7:00 to 7:30 he appeared generally depressed and became irritated about seemingly trifling matters. At 7:40 pulse was taken and found to be 120, weak, irregular and easily compressible. Skin was cold and clammy and he expressed a belief that he was going to be nauseated. 7:50, pulse had dropped to 96, but was still weak and irregular.

8:00	Pulse 92,	Severe vomiting.
8:15	" 96,	Vomited.
8:30	" 88	
9:00	" 84	
9:30	" 86	
10:00	" 96	

The last record was taken after H. had been up walking around the room, which undoubtedly accounts for its increase over the one previously taken. It was observed throughout that when H. exercised, even to a slight extent, the heart action was markedly accelerated. In one instance the pulse rate was taken immediately after H. had been walking and was found to be 96. When taken less than a minute afterwards it was about 80, and was again increased to 96 by comparatively slight muscular movement. The pulse rate varied from 96 to 80 or 82 within a minute's time. Throughout it was soft and obliterated by slight pressure. During the whole evening his ideas seemed to be more or less confused, and it was apparently impossible for him to concentrate his thoughts on any particular subject. After beginning to make a remark, he would lose entirely his trend of thought, and be quite unable to complete it. At 10 p. m. the more marked effects of the drug had worn off.

P.'s Observations on Subject H. Exp. I. H. showed no symptoms whatever until about 6:30, when it became evident that he was worried and somewhat nervous. He said that the effect of the drug was coming on and expressed a desire to go to the laboratory as soon as possible. On the way he worried and fretted, at times fearing that he would be unable to walk and would make a spectacle of himself before reaching the laboratory. However, nothing of particular interest happened during the trip except an evident lapse of memory and evidence of nervousness. On arriving at the laboratory he expressed a desire for a comfortable chair or a bed and complained of feeling sick at his stomach. He was pale and his skin was cold and moist. Before long he vomited freely. This was repeated after a few minutes, but did not seem to relieve him greatly. He complained of a dryness in his throat and was continually wetting his lips. His pulse rate was almost alarming, varying greatly in rate from 84 to 120 within a minute, but for the most part being very fast and weak. His skin was cold and clammy and respiration somewhat shallow.

For over two hours he lay back in his chair in a sort of stupor, seeming to be asleep, but easily aroused. He had no disposition to attempt anything, not even to talk. During the early part of the evening he was evidently much worried, fearing that his condition would deter his colleagues from taking the drug. He also seemed to have a dread that some one other than those associated with him in the experiment would see him. He was asked to write, but firmly refused even to attempt it. When asked if he were having beautiful dreams and visions, his only reply was, "I wish I could tell you." He remained in this semi-conscious condition until about 10 o'clock when suddenly he aroused himself, said he felt all right and was ready to go home.

He dozed off momentarily twice on the car, and felt all right the next day except for a very faint headache.

EXPERIMENT II.

Personal Experience. A 2-grain dose of solid extract *Cannabis Americana* was taken upon an empty stomach. For fully two hours no symptoms of any kind were experienced. Then there was a peculiar unnatural sensation. This initial manifestation is difficult, in fact, impossible of description. No distress was evidenced nor was the feeling exceptionally pleasant. It was simply a recognition of the fact that I was not quite myself. Following this period there shortly developed a feeling of great elation, and a sense of well being. With no particular reason for being so, I felt inexpressibly happy. There was a twitching and drawing of the corners of my mouth and an uncontrollable desire to laugh, although I could not laugh aloud. Everything pleased me and I felt that my happiness was absolutely complete. The only tinge of regret that I experienced was that my colleagues were not having the same delightful experience. The more marked effects of the drug appeared to come in waves, although the general sense of elation was never lost. An occasional undulation would sweep over me and I would feel as though my body was swaying and there was an inclination to strike the table with my hands in an exuberance of delight. At times I had great trouble in coördinating my thoughts, although between the paroxysms which have been de-

scribed, my mind seemed reasonably clear. I felt that I was acting in an exceedingly foolish manner but had no power to control myself and in fact did not care to. As it grew late in the evening the stimulating effects of the drug decreased and I became somewhat irritable and touchy about trifling matters. At 10 o'clock the greater part of the effects had worn off, although I did not feel entirely normal. After a light lunch I retired and slept very soundly. No after effects of any kind were experienced on the following day.

II's Observations on Exp. II. L.'s experience was almost entirely one of enjoyment. There was no nausea and no evident discomfort, although he once remarked that the earlier effects were much the more pleasant. There was unquestionably the same well-being, expressed by his repeatedly saying, "I just feel so good." Hearty laughter for which there was no evident reason was explained in this way. At no time was there any desire to carry on conversation more than to answer any questions addressed to him. This would account for there being no noticeable difficulty in keeping his thoughts collected.

Later a sensation of drowsiness was evident and with it expressions of irritation when anything of a disturbing nature was said or done. The effect of the drug was long delayed in appearing, nothing being noticed either by himself or the others until nearly two hours after its administration. This probably explains why its effect was so persistent, intoxication being very evident fully six hours after the drug was taken.

P's Observations on Exp. II. No effect was noticed for about two hours when a slight twitching of the corners of the mouth was observed and a tendency to smile. When asked why he smiled he said he didn't know, just felt good but could not define the sensation, it was simply one of enjoyment. He said that he felt sorry for us, as he was the only one enjoying himself. Presently he broke into a restrained, but hearty laugh. When questioned, he said it was simply because he couldn't help laughing. He admitted that he was making a fool of himself, but said he couldn't help it and didn't care anyway. At one time he pointed at an article of furniture in the room and had another laughing spell. When asked the reason he merely said that it was funny. He answered all questions put to him, but showed no tendency to be talkative, most of his answers being short.

These spells would last for probably a minute or two and then there would intervene a normal period of ten to twenty minutes. He said he was simply "happy" drunk, and he looked and acted that way. Later in the evening he showed a decided disposition to be annoyed by talking or answering questions and remarked that the earlier effects of the drug were much the more pleasant. At 10 o'clock the action of the drug had worn off sufficiently so that he felt inclined to go home. He was somewhat irritable on the walk from the laboratory and said afterwards that he was very drunk on the way home. He ate lunch before retiring and enjoyed a comfortable night's sleep and felt fine the next day, with no bad effects whatever. Observations were taken of the blood pressure (systolic) and of the pulse rate at intervals during the evening, but nothing abnormal was noticed. The pulse was full and steady and the rate averaged about 80, not varying more than six beats at any time. The blood pressure was 130 mm. of mercury throughout the evening.

EXPERIMENT III.

P. relates his own experience as follows: At 4:30 I took a capsule containing two grains *S. E. Cannabis Americana* on an empty stomach. About one hour later, while talking to my colleagues about the best time for them to go out for a lunch, they asked me if I didn't feel anything; I answered, "No," and truthfully I did not, but no sooner had I spoken than I experienced a peculiar sensation. The corners of my mouth commenced to draw and I could not refrain from laughing; I laughed so heartily that I was tired afterwards, although nothing seemed particularly amusing. This spell lasted for probably half a minute, although it seemed much longer to me.

Then my associates left me, and I was alone in the laboratory. At this time I felt most exhilarated. Everything seemed so enjoyable and I was extremely comfortable. I walked up and down the corridor, swinging lightly along, seeming to walk on air or feathers. My feet weighed nothing. It was no effort to walk; it was more like floating along. My sense of proportion was lost, my feet seemed miles away from me, my arms were long and big. The corridor was miles long; I walked or rather floated up and down apparently for hours, waving my hands and arms, marking time to imaginary music. All this while I was smiling and enjoying myself immensely. All my faculties were not impaired, however, because to test myself I read part of a typewritten notice on the bulletin board. I was standing there when a person who knew nothing of the experiment passed by. We greeted each other and evidently he noticed nothing peculiar in my appearance nor actions. I was surprised at this, for it seemed to me that he must see how silly I looked and how I swayed when I walked, but especially he should have noticed my voice, which sounded to me like the deepest bass. It seemed to me to be musical and full toned and I liked to hear myself talk. My colleagues, however, did not appear to notice it nor did they appreciate that I felt so good toward them and myself.

After what seemed hours of walking I sat down to await their return from lunch. Several waves swept over me during this time and also later on, which are very difficult to describe adequately. The feeling was one of well being and perfect satisfaction beginning with a sort of numbness or fullness in the extremities, a feeling of unreality in the surroundings. I knew that my hands were normal in appearance, but when not observing them, they seemed to be detached and not a part of me. We played a game of cards and in playing a card I seemed to be throwing some enormous but very light article over a great distance. These spells usually started by smiling and ended in laughing rather hysterically, pounding the table with my fist. But I could not laugh aloud because of the peculiar drawing and constriction about my face and neck previously noted. As the effect began to wear off these paroxysms became less frequent but no less irresistible. I felt no unpleasant symptoms at any time. About 10 o'clock I was hungry and ate some sandwiches with great relish before going home. I reached home without any difficulty, not feeling drowsy and without any change in my feeling of enjoyment. Upon arriving home I retired immediately because I felt that I was not entirely normal. Before going to sleep, however, I experienced another wave.

I awoke early the next morning very much refreshed and none the worse for my experience.

H.'s Observations on Exp. III. The experience of P. was practically a duplicate of L.'s. The effect appeared one hour after taking the drug and except for an occasional lapse, his normal condition was regained five hours afterwards. There was more uncontrollable laughter in his case, no irritability and no apparent discomfort at any time. He seemed to give himself up more completely to the enjoyment of his sensations than the others. At times he seemed to be addressing an imaginary audience, pacing back and forth, gesturing and appearing to talk to himself.

We were inclined to question whether some of his actions were not assumed and voluntary; but he assured us that he was acting just as he felt.

L.'s Observations on Exp. III. P. began to feel the effect about an hour after the administration of the drug. He seemed to be possessed of a desire to move about, paced up and down the corridors, declaring he felt as though he weighed not more than fifteen pounds. He was apparently very much pleased with himself, and bubbling over with happiness. At times he would be seized by fits of uncontrollable laughter, which in some cases was spontaneous and without apparent cause, but usually it was incited by the others laughing at or with him. Between these paroxysms of laughter P.'s condition was practically normal, he could talk rationally, and his mind, as far as indications could be depended upon, was clear. At no time did there seem to be a loss of coördination. It was observed that the action of the drug was apparently produced in waves, while between these seizures one's condition would be practically normal.

During the three experiments recorded above the one under observation felt a certain restraint, knowing that the others were watching for every abnormal action. For this reason it was decided to vary the conditions in the further experiment and have all three under the influence of the drug at the same time. It was hoped in this way to eliminate the restraint evident in each of the individual experiments and perhaps observe some new features in the action of the drug.

EXPERIMENT IV.

In this experiment H. took Extract of Cannabis Americana again, while L. and P. took extract Cannabis Indica. This gave an opportunity for L. and P. to compare the effect of the two varieties, both on themselves and on the others, while H. took this opportunity to repeat the experiment with all the conditions the same, except that he ate no dinner until the effect was practically gone. All three took the drug at 4:30 on empty stomachs, the dose in each case being two grains.

This last experiment, while not developing any new features, was in other respects successful. H. had no unpleasant experience and the evening was one of unalloyed pleasure, proving that all the discomfort was directly traceable to the nausea from having food in the stomach. L. considered the effect to be much less intense and of shorter duration in this experiment than that from the American drug, while P. took the opposite view in his case.

H.'s account of the experiment is as follows: L. was the first to note the characteristic effect of the drug while P. and I remained unaffected for fully two hours after it was taken.

The same feeling of well-being and complete satisfaction was experienced by all, this being as evident to the observers as to the subject himself. Uncontrollable laughter was more frequent and longer continued than in the individual cases, probably because during a cannabis intoxication so little is necessary to excite it on, and when one started the others joined in the hilarity. No one felt inclined toward any activity, but only to give himself complete relaxation. Each of the three was emphatic in stating that he knew when he was making himself more or less ridiculous, but could not control the impulse nor did he wish to restrain himself.

About six hours after taking the drug, at the end of a quiet card game, without any comment, each of the three assumed as comfortable a position as possible and fell into a doze. It was apparently not sleep in any case, as each was fully conscious of noises in the building and annoyed by them.

This lasted not more than ten minutes, at the end of which we all felt fully aroused and ready for something to eat. This ended the experiment as outlined in advance. The only variation from the original plan was, as noted, for all three to experience the effects at the same time. No point was lost because of this, since the subject is at all times acutely conscious of everything occurring.

L.'s Account of Experiment IV. My personal experience with Indian Cannabis was very much the same as those already narrated as occurring with the Cannabis Americana, although the effects were developed somewhat more promptly, and were not quite so pronounced or lasting. P's feeling seemed also to duplicate very closely those which he had had from the Cannabis Americana, but contrary to my own were somewhat more pronounced. He did not have any of the nausea or any of the other uncomfortable features which occurred during the first experiment, indicating very clearly that these symptoms were due to the hearty dinner which he had eaten, and were not to be construed as characteristic of Cannabis. The drug in this last experiment was taken at half past four, and the greater part of the effects were felt from about half past six to eight o'clock. After that time the more exhilarating action had worn off, and I experienced only a drowsiness. For a half or three quarters of an hour after I had ceased to feel any more marked effects of the drug H. and P. continued to be very much exhilarated. About 9 o'clock all three of us became drowsy, and as if by mutual consent laid our heads on the table in a sort of doze, although none of us really went to sleep. This condition continued about ten to fifteen minutes after which we felt much refreshed.

P.'s Account of Experiment IV. L. was the first one to show any symptoms from the effect of the drug. He had practically the same experience as on the previous occasion. H. and I did not feel any effect for fully an hour later than L., but finally went under the full influence of the drug very suddenly, there being no premonitory symptoms whatever. At times one of the three would have a paroxysm of laughter alone, but usually one would start laughing and the others join him at once. It was observed, however, that L. was getting over his intoxication early and he sat there seemingly rather bored and provoked at the others for being so happy. The

effect on myself was apparently more intense than that of the previous test, and more so than was experienced by the others, laughing spells being more frequent and inclined to be hysterical. No unpleasant symptoms were experienced by any one of the three during the evening. After several hours playing cards and talking a peculiar thing happened. Suddenly and without a word from any one we stopped the game, lay back in our chairs and dozed. It seems to me that I slept for a long time although it was in reality only about ten minutes. It probably was not really sleep as I remember hearing the watchman on his rounds and I wondered whether he would come into the room where we were. As suddenly and spontaneously as we had dozed, we aroused and, having practically recovered from the effects of the drug, prepared to go home.

In conclusion it may be stated with certainty that the physical and mental condition of the human subject at the time of administering this drug influences its effects both in degree and kind. For that reason no two persons can be expected to exhibit the same symptoms as a result of ingesting equal quantities of the same drug, and no person can be depended upon to react in exactly the same manner from the same drug on different occasions. With these facts in mind the differences in the three personal experiences above related are readily explainable and there is no reasonable ground for doubting that *Cannabis Sativa* grown in India and America contains the same active constituent.

The method for assaying extracts of *Cannabis Sativa* described in detail by Houghton and Hamilton (*Am. Journ. of Pharm.*, Jan., 1908) makes use of dogs for exhibiting the characteristic effect of the drug. Attention is called in this article to the fact that the animals must have been specially selected for the purpose. They must not only be susceptible to the drug but their behavior under its influence must have been determined by preliminary observation. We may thus avoid errors due to their individual idiosyncrasies. There are, apparently, no such marked differences in the character of the reaction in dogs as are observed in human subjects nor are they so variable at different times if they have been carefully selected as described above.

When proper precautions are observed the activity of an extract *Cannabis Sativa* relative to a standard extract may be determined with reasonable accuracy. My personal experience of twelve years in observing tests of *Cannabis Sativa* obtained from different countries, Africa, India, Germany, Greece and various localities in North America has convinced me that they all contain the same active constituent.

SOME COMMERCIAL SAMPLES OF DRUGS.

A. W. LINTON, VALPARAISO, IND.

The purpose of this paper is to report the results of a series of determinations which were made with the object of ascertaining, as far as possible, the purity and quality of certain drugs, especially some of the gum-resins, as furnished to the trade by the wholesalers of the middle west. The samples were obtained

from five different dealers, located in Chicago and Indianapolis. In some cases determinations were also made of samples taken from our stock of drugs used in teaching materia medica, most of these having come from an eastern importer who makes something of a specialty of supplying drugs to be used as materia medica samples.

By examination of different price-lists it was learned that considerable diversity prevails in the manner of denoting the different qualities of these drugs. In ordering the drugs, most of which were obtained through retail pharmacists, they were ordered first as "powdered," second as "whole goods," and third as "best select." Most of the houses furnished powdered and whole samples of each drug ordered, but only one firm sent more than one quality of the unground drugs.

The samples weighed for determination were all of the air-dried drugs. The determinations for percentage of alcohol solubility were made by extracting to completion in a Soxhlet extractor, the comminuted drug having been mixed with washed sand to facilitate extraction. In ash determinations the samples were burned to a white ash of constant weight without using any oxidizing material.

Asafoetida.—I will show first my results with ten samples of asafoetida, a drug very much under discussion of late because of the highly adulterated condition in which it is commonly found. As you are well aware, the U. S. P. VIII specifies that asafoetida shall yield not less than fifty percent of alcohol soluble matter, and not more than fifteen percent. of ash, the ash limit having been raised from ten to fifteen percent. after the first edition of the eighth revision appeared. The tabulated results follow:

Number of Sample.	State of Comminution.	Percentage Alcohol Soluble.	Percentage of Ash.	Remarks.
1	Whole	52.65	25.76	
2	Powdered	38.54	36.49	
3	Whole	33.61	43.54	—Contained gypsum
4	Powdered	42.07	41.03	coated with asafoetida
5	Whole	62.87	12.85	
6	Powdered	3.75	88.82	—Said to contain 50 percent. dryer
7	Whole	48.7	15.3	—Contained glycerin
8	Whole	59.76	6.54	—Labeled "Optimus"
9	Powdered	60.76	13.66	
10	Whole	44.98	23.70	

We have been led to believe by some of the published reports that no asafoetida was being offered which would comply with the pharmacopoeial requirements. It will be noted, however that three out of the ten samples examined do comply in both particulars, and strange to say, one of these is of the powdered drug, which is undoubtedly especially prone to adulteration. Sample No. 7, contained a large amount of glycerin which of course would make the results valueless for purposes of comparison. Sample No. 8 which makes an excellent showing was labeled "Optimus" indicating that one firm at least is prepared to furnish a high-grade article when the best is specified on an order. Sample No. 6 should be carefully noted. This sample was not under the label of the house from which it was purchased, but bore the label of a prominent firm of drug millers. It was labeled "Powdered Asafoetida Compound, 12% soluble gum mixed with 50% dryer. "The percentage of ash was not stated on the label. The sample evidently consisted almost entirely of clay. Sample No. 3 was

largely adulterated with lumps of gypsum which were thinly coated with asafoetida. Most of the samples of whole drug showed white lumps of mineral matter, much of which I think was gypsum, although some gave a test for carbonates.

One house stated on the labels of both samples furnished percentages of ash and of alcohol soluble matter, another stated only percentages of alcohol soluble matter. In most cases the percentages stated were only very slightly different from the results obtained by us. In this respect No. 6 was a notable exception.

I think we may learn from these results that there is asafoetida on the market both whole and powdered which conforms to U. S. P. requirements, although there is evidently much more that does not. It is apparently true that it is not absolutely essential to heavily load asafoetida with inert material in order to powder it, although it probably is necessary to drive off the volatile oil, thereby greatly impairing its value.

Ammoniac.—I present results obtained from four samples of ammoniac. All of these are of the whole drug, none of the houses furnishing the powdered article. Ammoniac is, of course, not at present official in the United States. It may be of interest to note that the German Pharmacopoeia places limit of ash at 7.5%, and the alcohol insoluble matter at 40%. The French Codex has the same limit for alcohol insoluble matter but places ash limit at 5%.

No. of Sample.	State of Communion.	Alcohol Insoluble.	Percentage of Ash.
1	Whole	27.83	2.20
2	Whole	34.74	
3	Whole	28.36	3.1
4	Whole	29.42	5.82

All samples showed admixtures of seed and portions of stems, but gave little evidence of mineral adulterants.

Myrrh.—Twelve samples of myrrh were examined. Our Pharmacopoeia makes no statements in regard to ash, or alcohol solubility of myrrh, but gives a qualitative test intended to indicate presence or absence of bdellium. The P. G. places ash limit at seven percent., alcohol insoluble not higher than 65%.

No. of Sample.	State of Communion.	Percentage Alcohol Insoluble	Percentage of Ash.	Remarks.
1	Whole	62.83	6.3	—Materia Medica Stock
2	Powdered	77.52	18.3	
3	Whole	72.07	5.87	
4	Powdered	78.41	11.36	—Labeled "Optimus"
5	Whole	75.18	7.31	
6	Powdered	75.67	14.59	
7	Whole	75.9	8.88	
8	Powdered	74.62	11.29	
9	Whole	70.90	12.66	
10	Whole	69.30	7.22	
11	Powdered	72.04	11.09	
12	Whole	73.39	5.11	

Only sample No. 1 is in conformity with the requirements of the P. G., and this was a sample taken from our materia medica stock and I think had been on hand for some years.

All of the samples failed to indicate presence of bdellium on application of the nitric acid test of the U. S. P. Also all samples failed to give indications of East India or Bisabul myrrh when the bromine test of some of the pharmacopoeias was applied.

Gamboge.—Nine samples of gamboge were examined, five in pipe and four in powder. Our Pharmacopœia specifies not over three percent. of ash, not more than 25% of alcohol insoluble matter. Both German and French Pharmacopœias place the ash limit at 1%.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.
1	Pipe	21.66	2.5
2	Powdered	12.23	2.48
3	Powdered	24.93	2.44
4	Pipe	27.34	2.37
5	Powdered	28.81	2.52
6	Pipe	21.79	2.49
7	Powdered	47.85	2.91
8	Pipe	24.64	1.80
9	Powdered	16.46	2.39

Six of the nine samples complied with both requirements and two of the others exceeded the limit for alcohol insoluble material only slightly. Sample No. 7 was found to be adulterated with starch or some starchy material.

The remainder of the drugs reported upon are not gum-resins, but were included in the investigation.

Guaiaic.—The U. S. P. VIII requires that guaiac shall yield not more than 4% of ash, and not more than 15% of alcohol insoluble matter. The acid number, it says, shall be between 70 and 80. The Codex says that guaiac shall be soluble in 90% alcohol.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.	Remarks.
1	Powdered	20.08	4.54	
2	Whole	23.79	3.36	
3	Powdered	24.14	4.75	
4	Whole	4.84	0.77	
5	Powdered	20.61	5.33	
6	Whole	31.90	4.17	
7	Powdered	1.17	0.264	
8	Whole	0.624	0.215	—Soft and Plastic.
9	Whole	4.67	1.36	

Four samples out of the nine examined were in conformity with requirements as far as ash and alcohol solubility are concerned. I will call your attention to the very low percentage of ash and also of alcohol insoluble matter in sample No. 8. This sample was in soft plastic cakes very different indeed from the hard brittle resin usually met with. Sample No. 7, a powdered article from the same firm which furnished No. 8 also gives good results. In regard to the acid number for guaiac, I will say that I did not find it possible to obtain accurate results on account of the difficulty in securing a sharp end point. I did not regard my results in this determination as worth reporting, and I note that several other investigators make similar statements in regard to the acid number.

Benzoin.—The U. S. P. VIII places the ash limit for benzoin at 2%, and states that it should be almost wholly soluble in warm alcohol. The Codex has the same requirements. The P. G. has the same ash limit, but is more specific in regard to alcohol solubility, stating that the alcohol insoluble matter should not exceed 5%. The Codex states plainly that only Siam benzoin is official, while the P. G. provides a test for cinnamic acid excluding samples which contain it.

This means that all except Siam benzoin is excluded, since most authorities agree that Siam benzoin does not yield cinnamic acid while other varieties do.

The results obtained with twelve samples are tabulated.

No. of Sample.	State of Comminution.	Percentage Alcohol Insoluble.	Percentage of Ash.	Remarks.
1	Whole	0.878	0.203	—Siam benzoin from stock. This sample was ginger.
2	Whole	10.66	0.906	
3	Powdered	.....	.....
4	Whole	21.247	1.16	
5	Powdered	19.278	1.226	—Contained tears of sandarac. —Labeled "Optimus."
6	Whole	31.689	1.83	
7	Powdered	10.689	1.60	
8	Whole	23.414	1.204	
9	Powdered	32.869	1.93	
10	Whole	29.57	1.17	
11	Whole	26.72	1.14	
12	Whole	23.73	1.29	

It will be observed that while all samples were within the limit for ash, only one might be said to be "almost wholly soluble in alcohol," as the U. S. P. states the requirement. Sample No. 1, which yielded less than 1% of alcohol insoluble material, was a sample of Siam benzoin from our materia medica samples. It was a fine sample, of distinctly "almondy" type. Sample No. 3 though purchased under the label "Powdered Benzoin," was nothing more nor less than powdered ginger. Siam benzoin is evidently not commonly found on the market in the middle west, since it was ordered from all the houses from which drugs were obtained but not one supplied it. I find that it is quoted in few drug price lists published west of New York.

I think the Pharmacopoeia should make a more exact statement in regard to alcohol solubility. It would appear that unless we wish to exclude all varieties but Siam, it will be necessary to make the allowance for alcohol insoluble matter rather liberal. All samples of unground Sumatra benzoin examined showed large content of bark and woody material. It may be that this admixture is unavoidable under conditions in which it is collected. The information on manner of collection of Sumatra benzoin seems to be very limited.

Lycopodium.—Although there is no good reason why a report on lycopodium should appear in a paper which is concerned principally with gum-resins and resins, I will give results on several samples examined. Sample No. 1 was from stock, the others came each from a different wholesale dealer. You will recall that the U. S. P. VIII places the ash limit at 5%. The P. G. is a little more stringent, allowing only 3%.

No. of Sample.	Percentage of Ash.	No. of Sample.	Percentage of Ash.
1	1.41	4	1.89
2	1.57	5	1.31
3	1.79	6	1.49

All samples yielded a percentage of ash not only below five but below two percent.

None of the samples when examined under the microscope showed any evidence of adulteration, except in one case in which a mere trace of foreign substance was detected. All gave negative results when the iodine test for starch was applied.

I note that some reports refer to frequent adulterations but the above results would indicate that the market offers a perfectly pure article. It would seem that the ash limit might well be placed somewhat lower than 5%.

In conclusion I will state that I think that ash standards might well be established for a number of other drugs than those for which they are at present stated. I would suggest however that if ash determinations are to become of increasing importance, that a method of procedure be outlined in the introductory notices of the next revision.—*Valparaiso University, Department of Pharmacy.*

REPEATING PRESCRIPTIONS.

British physicians and pharmacists are trying to get together in closer relations to the mutual advantage of both callings. Dispensing physicians and counter prescribing pharmacists have caused as much trouble in that country as they have in the United States. One pharmacist stated when discussing the matter that he had just filled a prescription which, as near as he could judge, had been filled 135 times, the prescriber receiving a single fee for writing it. It seems that the English law says that the prescription belongs to the patient who pays the fee, but the doctor who writes it has the power to designate the number of times it may be filled. The Pharmaceutical Journal suggests printing on the prescription something like the following:

This prescription is given upon the understanding that it is for present indications only, and that it is not to be repeated more times than I order.

Of course, the physician should state the number of times he will permit the prescription to be filled, then sign his name and date the order.

While our British cousins are coming to an understanding it will be well for the pharmacists of this country to see if they cannot make better progress in the near future than has been accomplished in the past.—*Meyer Bros. Druggist.*

LEADERS IN THE MAKING.

If you want to be something more than the average worker, you must do something more than average work. If you expect to become an important figure in the world of commerce, a captain of industry, instead of a common soldier in the ranks of labor, you must put your shoulder to the wheel and push, and push hard.

It is astonishing how many young men are trying to get a living without hard work. It does not seem possible that so many people could live off one another without really producing anything themselves. Everywhere we see young men looking for easy places, short hours, and the least possible work for the greatest possible salary.

Even if it were possible to get a living with a very little effort, you could not afford it. You could not afford to coin your brain into dollars, to make dollar-chasing the ambition of your life. There ought to be something larger in you than that. There is something in you that will not be satisfied that will protest against selling yourself so cheaply. You can not respect yourself unless you are doing your best, making your greatest effort to bring out the best thing in you.—*Orison Sweett Marden.*

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

REPORT OF THE CHAIRMAN OF THE A. PH. A. COMMITTEE ON THE UNITED STATES PHARMACOPŒIA.

L. D. HAVENHILL, LAWRENCE, KANSAS.

In the absence of a report from the committee as a whole the Chairman submits the report as an expression of his individual views.

The work of this committee as defined in chapter X, Article X of the by-laws of this Association is three-fold. In the past this committee has confined its efforts largely to the noting of errors of any kind found in the U. S. P. and to suggesting improvements in processes, etc. The committee this year finds itself embarrassed along these lines by the lack of available material on which to work, since it is obvious that further criticism of the U. S. P. VIII is useless and that suggestions relating to the U. S. P. IX are presumptuous.

Your chairman, recognizing that the members of his committee were also members of such important committees as the Committee on the Revision of the U. S. P., the Committee on the National Formulary, and the Committee on Unofficial Standards, and realizing that these important activities are absorbing all of their available time and energy, has not outlined any specific line of work during the year.

This committee as a whole has in the past made but little effort to exercise its function of collecting statistics regarding the frequency with which official and non-official remedies are used in medicine. This has been due largely, we believe, to the difficulty in securing reliable data and to the fact that generally speaking statistics are dry and uninteresting. If this committee is to serve the Association along this line, the chairman feels that the appropriation of a small sum to defray clerical expenses will be necessary. The third and last function of this committee is to endeavor to ascertain the general wishes and requirements of the profession throughout the country in regard to any desired changes in the Pharmacopœia.

The chairman has felt for some time that something should be done to promote a more favorable attitude toward the Pharmacopœia among physicians. This feeling has become so strong as to amount to a conviction and it is this part of the committee's work that has engaged his attention during the past year. As might be expected, there is a sort of general apathy in pharmacopœial matters at this time. Some of the men who have felt very strongly have already expressed themselves and are content to await the result before launching forth anew, while others in the absence of any definite information concerning the

progress of the U. S. P. IX believe that it is useless to anticipate the demands of the U. S. P. X.

As the result of considerable conversation, observation, and correspondence, your chairman is convinced that the U. S. P. does not measure up to the expectations or desires of the various interests centered in it. This is unfortunate and must in some way be remedied. As one practicing physician puts it, "The doctors don't know much about the book." A canvass of physicians' libraries will, I believe, bear out the truthfulness of his assertion. Relatively few of them possess a copy of the U. S. P. Why is this? The answer is obvious, the book does not contain sufficient material that is vital to his successful practice and so he is learning to do without it. That the physicians are not indifferent to the importance of a pharmacopœia is evident from such assertions as the following, coming from leading men in the profession. One physician writes to the effect that "Owing to the press of other work I must decline your kind invitation to contribute a paper. However, I do not think that you are missing anything, for all my suggestions do not seem to have had any visible effect." Another writes, "So much has been written by the medical profession regarding its ideas of pharmacopœial revision that I do not feel that anything more need be said. I for one do not feel like making any further effort to present to the pharmaceutical profession the wishes or ideas of the medical profession." Another writes to the effect that he would be glad to see an A. Ph. A. section on the U. S. P. and N. F. established where physicians and pharmacists could meet on common ground, where pharmacists could discuss things of interest to physicians and where physicians could discuss things of interest to pharmacists. This assertion but confirms the contention of Professor Oldberg for a sixth section in the A. Ph. A.

Since the U. S. P. and N. F. have been made legal standards, those who are intrusted with the enforcement of the Food and Drugs Law frequently find that these standard works are inadequate for their purposes, and they are desirous of revision along lines suitable for law enforcement. Pharmacists also apparently find the U. S. P. and N. F. insufficient for their needs and frequently substitute for one or both a dispensatory or some other more elaborate formulary. The result of this must necessarily be a state of growing dissatisfaction. At the present time there are several standing committees whose aims are to improve the standards of the U. S. P. It is true that these committees were not formed at the request of the U. S. P. C. Committee of Revision, but their work is not without value, and it is the growing belief that these various committees should be brought into closer harmony, and that to make their work more effective these committees as such should be officially recognized by the U. S. P. C. Committee of Revision. In this way much of the work of revision might be accomplished in advance and at a saving of considerable energy which is now apparently lost in duplication.

The original intent of the Pharmacopœia was to secure for the physicians uniformity in drugs and medicines. This primary idea in many cases seems to have been overlooked at the expense of the pharmacist and the annoyance of the physician.

Your chairman is convinced that in order to harmonize these various interests an entire reorganization and adjustment is necessary. The Pharmacopœia should

be published in three volumes. Two volumes should be of primary interest to pharmacists; one of these should be essentially a book of simples. It should comprehend all drugs and simple preparations that are used by physicians of what-so-ever school, giving appropriate titles, descriptions, and tests for same. Deletions should be unnecessary, but admissions should be made as rapidly as demanded by physicians. The other volume should be a formulary pure and simple. It should contain standard formulas for such medicines as are demanded by physicians in their regular practice, such medicinal preparations to be made from the standard samples. The third volume should be the physician's handbook and contain only such matters as are of interest to physicians in their practice. The editing and revising of this book should be intrusted to the best physicians, foremost pharmacologists, and therapeutic experts of the country. The information contained in this volume would have the stamp of authority in all medical schools. It would thus be possible to place in the hands of physicians the latest information concerning drugs, without in the least depriving the older members of the profession of their favorite drugs simply because modern experimentation had failed to show that they were physiologically active.

Necessary additions should be made annually by supplement and complete revision made, say every ten years. In this way the pharmacists would exercise only their legitimate function—that of placing the stamp of approval not upon the drugs and preparations but only upon the methods of selecting, testing and preparing them. Those entrusted with the enforcement of the sections of the Food and Drugs Law would thus be provided with sufficiently comprehensive standards.

By so doing, it is believed that physicians can advance the science of therapeutics as rapidly as they desire without seriously disturbing their less progressive brothers, while pharmacists can also progress without requiring the busy physician to revise his materia medica every ten years. In this way it is believed that these great interdependent interests may be satisfactorily served and brought into harmony.

GETTING READY FOR THE 1920 PHARMACOPOEIA.

WM. MITTELBACH, PH. G., BOONVILLE, MO.

The Committee on Pharmacopoeia of the American Pharmaceutical Association being a continuous body, might well take in hand matters pertaining to the 1920 Revision. Sub-committees from this Committee could begin at once the standardization of potent drugs; working out simple and reliable tests of identity and the detection of impurities and adulterants; testing working formulas for the galenicals; ascertaining to what extent the various drugs, chemicals and preparations of the Pharmacopoeia are used, and gathering general information, that will be useful and of value to the Committee having in charge the revision of that period. This will enable the Committee to get the Pharmacopoeia into the hands

of the physician and pharmacist more nearly on time, than has happened in the past, and is happening now. There is no good reason in completing the Pharmacopoeia 2, 3 or 4 years after the time the Committee is selected. Under present methods I fully realize that it is impossible to have the work ready for the printer under 3 or 4 years. Getting ready before time will obviate this delay, and we will have our guide book at the time we should have it. 1920 will mean 1920, and not 1925.

This is not criticism of the present committee; but only suggests a way out of the difficulty.

The information gathered in this way by the American Pharmaceutical Association, will, at once, be available to the Committee of 1920. State Associations can also pursue a like course. All these data, together with the contents of the digest being issued by the U. S. Public Health and Marine Hospital Service, will furnish material enough, and of the most reliable kind, from which a world's work can be made, and of which the pharmacists of our country will be proud. Our Association can, through its Committee, get in touch with like committees of other countries that will eventually result in a World or International Pharmacopoeia, and the simplification of pharmacy and therapeutics in general.

A PECULIAR CASE OF COMMON SALT POISONING.

O. H. CAMPBELL, M. D., ST. LOUIS.

The patient, R. G., was a healthy boy of 5 years. Parents were living and well. Patient had had mumps at 4 years and measles at 3 years; no other illness. This summer he had not slept well and the mother believed that the child might have worms. On the advice of a friend the mother decided to administer a salt enema. The suggestion had been to use one tablespoonful in a quart of water, but she misunderstood and used one pound of salt in a quart of water.

The enema was given at 5 p. m., July 13. In from five to ten minutes the child cried, with severe pains in head, became intensely thirsty, vomited violently, and soon began to purge violently; within thirty minutes he became unconscious and had one convulsion after another. I saw him at 6:30 p. m. and found him unconscious and unable to swallow, with one clonic spasm quickly following another. The temperature was 99.2, pulse 150, bowels moving often, passing blood and mucus. At 8 p. m. the temperature was 102.5, pulse 170; the eyes were crossed, and all of the symptoms seemed worse. At 9 p. m. the temperature was 104.6, pulse about 200. All of the symptoms seemed worse and continued to increase in severity until 10 p. m., when the child died. I was unable to have a post-mortem examination. I have searched the literature carefully but can find no parallel case.—*Journ. A. M. A.*, Oct. 5, 1912.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

THE PROPOSED FEDERAL ANTI-NARCOTIC LAW.

FRANK H. FREERICKS, PH. G., LL. B., CINCINNATI, OHIO.

After several years of consideration and discussion of the proposed legislation to curb the evil of habit-forming drugs in interstate commerce, we have now presented to us in H. R. Bill 25834 by Mr. Harrison of New York, what evidently purports to be the last word on the part of those who have been particularly active in the interest of such legislation.

Concluding, no doubt, that under the commerce clause of the Federal Constitution it would not be possible to secure and have sufficient control over the traffic in narcotics, it was found necessary to take refuge in the taxing power of the Federal Government, which is along the line of the original Foster Bill, and in disregard of the Mann Bill, as relating to this subject. It certainly must be agreed that the chances for sufficient and constitutional control are certain under the taxing power, whereas this sufficiency may be seriously doubted under the commerce clause. It necessarily follows, that those who are sincere in desiring a sufficient control of the narcotic evil, should not object to the imposition of a small tax, for the purpose of bringing this about, and the writer believes, that pharmacists and retail druggists very generally have evidenced their sincerity in desiring a sufficient control of the narcotic evil, in fact we may claim, that from the ranks of pharmacists have come the first demands for such proper regulation, and through their activity and advocacy the movement has grown, so as now to be about consummated into some proper and efficient legislation.

Since such legislation is likely to be of great concern to pharmacists, and may possibly be so framed as to place upon them a great unnecessary burden, and because they are best prepared to properly decide upon the real practical scope of such legislation, it can hardly be denied, that they should have the largest voice in framing it, and nothing should be enacted into law which does not have the full approval of those who are the pioneers in this movement.

Now an analysis of the Harrison Bill discloses an aim:

1st. To properly regulate under the taxing power, and this is intended to apply to all who in any way traffic in the named narcotics.

2d. To secure a sufficient regulation and supervision by a system of record keeping and making of returns as the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, may prescribe.

3d. To assure faithful compliance with these regulations by requiring each

and every trafficker to give bond, also, as prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury.

4th. To make it unlawful for any person to send or receive in interstate commerce any of the named narcotics unless registered, as provided by the bill.

5th. To place the burden of proving rightful and legal possession of narcotics upon the defendant in any action.

6th. Finally as evidenced by subsequent change in the original Harrison Bill its far reaching and sweeping effect is sought to be relieved by excluding from the operation of the intended law the *sale or distribution* only of preparations which do not contain more than two grains of opium, one-fourth grain of morphine, and one-fourth grain of heroin, or a grain of codeine to the fluid or avoirdupois ounce, as also Dover's powder, and all liniments or ointments, prepared for external use only.

While the bill contains other provisions, the foregoing ones are those which will effect directly the retail druggist, and therefore should find his careful thought and study. With reference to them it may be said:

1st. As already stated, if an exercise of the Federal taxing power is most likely to provide an efficient and constitutional control, then the retail druggist should not object to the exercise of such taxing power and to the requirement for paying a nominal tax.

2d. The requirements for record keeping and for the making of returns as applied to the retail druggists are far-reaching in effect. It is difficult to believe that one acquainted with the practical every day operation of an average drug store, would make such provision. Since the exception with reference to preparations containing small quantities refers only to *their sale and distribution*, and since the keeping of records which may be prescribed by the Commissioner of Internal Revenue, is without limit, we may assume, that such regulations will be made to include the keeping of a record, not only, of the purchase of opium, morphine, coca leaves, cocaine, their salts and derivatives or preparations, excepting the purchase only of such as contain in small quantities, but it will also include the keeping of a record of every grain of the substances, which goes into the manufacture or compounding of any and all preparations, prescriptions or other orders, as well as of the *sale* of all which contain more than the minimum quantities allowed. Now the present day pharmacist on the drug side of his business has no more frequent and legitimate demand than for the preparations containing narcotics in some form which in some way will require the making of a record. If he is not required to record a sale of paregoric, he is required to record the making of such paregoric. If he is not required to record the sale of a liniment, he is required to record the making of such liniment. If he is not required to record the sale of an ordinary present day cough syrup, he will be required to record its making. Even if the regulations should not require the separate recording of a physician's prescription containing these narcotics, the need for making returns would nevertheless include such separate recording. As applied to present day methods in the average well kept, legally and honorably conducted drug store this requirement seems impractical and almost impossible. When we

have in mind, that the largest part if not all the evils which result from interstate traffic in narcotics, are found where the respective states lack authority to restrict and supervise, then for the present at least we must conclude that such intended regulation as applied to the retail druggist is entirely unnecessary. It has yet to be shown, that state supervision and regulation of this traffic within the state, is either insufficient or impossible to be made sufficient, but it has been shown, that state supervision of interstate traffic is insufficient.

3d. The requirement for a bond from the retail druggist, while evidently intended to reach and effect irresponsible persons, is nevertheless likely to be hardship on the average responsible retail druggist, because in most instances it would mean the purchase of a bond from a surety company with an annual fee attached thereto, and since irresponsible persons can be sufficiently and effectively controlled by imprisonment for violation, the imposition of this additional burden, at least in so far as it concerns the retailer, is not well founded.

4th. The provision making it unlawful, for any but a registered person to ship or receive in interstate commerce any narcotics or any preparations, containing the named narcotics, beyond the minimum amount allowed, or other few exceptions stated, will apply with equal force to physicians' prescriptions. On the border line of the several states this may result in much unnecessary hardship and difficulty, and therefore this provision should have careful thought and study.

5th. The provision under which the burden of proof is placed upon the defense as against the general rule of placing it with the prosecution is for the purposes of the intended law to be approved. Since rightful possession is easily shown by registration, or by having received from a registered person for legitimate, and in such case, personal use, there can be no valid objection to the provision, when we have in mind the great difficulty which the authorities have found in the past, to prove possession for improper purposes.

6th. The exception made with reference to minimum quantities of opium, etc. and with reference to liniments and ointments for external use, are entirely inadequate to meet the objection which must come from the retail druggist as with reference to record keeping and making of returns. It may be satisfactory to the manufacturing and jobbing interests, because they do not otherwise deal in minute quantities to any great extent, though of course there is no desire to belittle the amount of extra work and trouble which nevertheless will come to both the manufacturer and jobber. At the same time this specific exception will undo one of the most beneficent and commendable results of the intended law as provided for in Section four (4) of the Bill by allowing the indiscriminate sale of all so-called patent and proprietary preparations, containing these narcotics within the prescribed limit to unqualified or unregistered people, that is, direct to the consumer. If the pharmacists of this country have any right whatever to assert themselves, they certainly do have the right to demand that the sale and distribution of narcotics and preparations containing narcotics no matter in what quantity, be reserved exclusively to qualified people, in so far as this is possible. While registration will not be limited exclusively to qualified persons, it at least will work greatly in that direction, and since the legitimate consumer is never

likely to be a registered person, this very result of Section 4 should certainly be maintained and not allowed to be undone by the exceptions provided in Section 10. There is no safeguard more necessary to the public health than to restrict the sale and distribution of narcotics to qualified persons, and when their sale to the consumer is practically made impossible in interstate commerce it will be a question of short time only until the respective states will see to it that within their respective jurisdictions the sale and distribution to the consumer is limited entirely to qualified people. As much as pharmacists should be opposed to the requirement for the keeping of records and making of returns on the part of the retailer, so or even more so, should they be opposed to this exception as shown in Section 10, and which evidently is intended as a concession, or at least made to appear so by some.

Having pointed out some of the objections to the Harrison Bill, in so far as it effects the retailer, it naturally occurs to reflect upon the possibility of suggesting suitable changes which will leave the intended law to serve properly the intended and really necessary interstate commerce supervision. In this connection we must not be unmindful of the right for consideration which both manufacturer and jobber demand and have, and any change which we propose should not be to their respective disadvantage, and should not add to the burden of conducting their respective legitimate business. We do maintain that the sale of narcotics or preparations containing narcotics, in any quantity, direct to the consumer should be restricted to qualified persons. In so far as manufacturer and jobbers differ in this from the retailer, the retailer has a right to be firm in his position. Beyond this however the retailer should have no desire to add to the troubles of the manufacturer and jobber in securing efficient regulation of interstate traffic in narcotics. It is anticipated that both manufacturer and jobber will aid to point out, that to relieve the retailer of the need to keep records and making of returns, is inconsistent and dictated by self-interest only, without due regard to the troubles and burdens of others. On examination however this will not be found true, because we must have in mind that the intended regulations concern interstate traffic only, and it is because of lack of regulation and supervision for this interstate commerce that the evil exists. Now the retailer is for all practical purposes limited to the doing of a business within the state, while the manufacturer particularly is doing business throughout all of the states, and the jobbers' business or at least a substantial part of it is also interstate. Therefore, state supervision as applied to the manufacturer is entirely insufficient, state supervision as applied to jobbers is in part insufficient, and since it is impractical to leave that part of the jobbing business which is within the state to state supervision alone, and the other part of the business which is without the state, to Federal supervision alone, it would seem entirely proper, that all of the jobbers' business should come within the supervision of the Federal Government. On the other hand since the retailer's business is usually within the state and by the operation of the intended law will necessarily be limited to within the state, it is equally proper that its supervision should remain with the respective state authorities. Believing that the objectionable features in Section 10 have been embodied in the Harrison Bill largely in the interest of the manufacturer and job-

ber it should therefore be the aim to preserve this advantage to them, and at the same time remove the objectionable features from the retailer's view point. By omitting entirely Section 10, and by changing and then adding a proviso to Section 3 of the Harrison Bill, this may be possible, and the following change in Section 3, is submitted for that purpose.

Add in Section 3, line 18, after the word "account" the following words: "with intent to sell otherwise than at retail, or with intent to in whole or in part distribute or sell in interstate commerce any of the foregoing drugs etc." After the word "prescribe" in line 22, add the following proviso: "Provided however that nothing contained in this section shall require the keeping of records or rendering of returns with reference only to the sale, distribution or disposition of preparations and remedies which do not contain more than two grains of opium, etc.," so that Section 3 as changed will read as follows:

"Section 3. That every person, importing, exporting, manufacturing, remanufacturing, compounding for his own account, with intent to sell otherwise than at retail, or with intent to in whole or in part distribute or sell in interstate commerce, or who distributes or offers for sale or sells in whole or in part in interstate commerce any of the aforesaid drugs, their salts, derivatives, or preparations, shall keep such books, render such returns, and give such bonds as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may from time to time prescribe. Provided, however, that nothing contained in this section shall require the keeping of records or rendering of returns with reference only to the sale, distribution or disposition of preparations and remedies which do not contain more than two grains of opium, or one-fourth of a grain of morphine, or one-fourth of a grain of heroin, or one grain of codeine, or their salts and derivatives in one fluidounce, or, if a solid or semisolid preparation, in one avoirdupois ounce; nor to powder of ipecac and opium, commonly known as Dover's powders; nor to liniments or ointments which are prepared for external use only: Provided further; that such remedies and preparations are sold, distributed, or disposed of as medicines, and not for the purpose of evading the provisions of this Act."

With the above changes it will be noted, that the retailer who confines his business to his home state would be relieved from keeping records, rendering returns and the giving of bond, unless this be required under the laws of his state. At the same time it will make it unnecessary for manufacturer and jobbers to keep a record and render returns with reference to the sale of preparations which contain the minimum quantities, just as is provided in Section 10. Finally it retains in the intended law to the fullest extent the provision under which it would be unlawful for any one in interstate commerce to sell to any one who is not registered under the law, and consequently it would prevent the sale of such articles direct to the consumer in interstate commerce, no matter in what quantity narcotics might be contained in such articles. Unless it is deemed well to make an exception with reference to physician's prescriptions, this simple change of the present Harrison Bill, should make it entirely satisfactory to the retail pharmacists of this country, and undoubtedly it would be a great step forward in preventing the evils which now exist because of a lack of supervision and regulation of interstate commerce with reference to the trafficking in narcotics.

A. FEW IDEAS ON EDUCATION AND LEGISLATION.

THOMAS H. POTTS, SECRETARY OF THE N. A. R. D.

To anyone who has sincerely the real interest of the retail druggists at heart, it must be very interesting to listen to the arguments pro and con that are engendered when the subject of the uplifting of pharmacy and the elevation of the pharmaceutical standard is broached. In my estimation it is absolutely necessary that each one of these issues subserve the other. From practical facts obtained from many years of actual experience, I am more than ever convinced that unless the young man has an inherent aptitude for pharmacy, it would be futile and absurd to even endeavor to teach him the ordinary rudiments of a pharmaceutical education, yet speaking from the other point of view, and it is more or less from a personal practical experience, I have seen many young men who from financial considerations were unable to obtain more than an ordinary common school education, but the rudimentary ideas were deeply implanted and if they were so fortunate as to secure service with an experienced and practical pharmacist it was to them like entering a new school where every day something new coming up was observed and accepted into their brain receptacle. I know of no calling that gives the really observing young man the opportunity for self-education as does that of pharmacy, and again so much depends upon the standard of their preceptor. I believe that all of us pharmacists of many years experience who have employed new clerks from time to time could in a short time determine just what kind of an employer he last had.

In this progressive age with the educational qualifications so easily and cheaply obtained, I fully believe that not only in the interest of the matriculant himself, but in the greater interest of the conservation of public health there should be an insistence on a higher educational standard for the embryo pharmacist. Accomplish this and the uplifting of pharmacy follows. The fact remains that unless the qualification, the standard of requirement, is elevated our pharmacists may never hope to reach that standard so much desired and required in this progressive age.

The uppermost issue of today in pharmaceutical circles is legislation, both state and national. The great trouble in the past has been that concentration of efforts has been made to promote legislation that was impracticable. The different State Association Legislative Committees at a large expense of gray matter and valuable time, which often could be illy spared, met from time to time and formulated legislative acts for introduction into state legislation on lines that seemed to be just what was wanted, yet when the practical politician got his opportunity it was soon torn into shreds. This procedure, of course, does not apply to all pharmaceutical measures, yet I regret to say it is the fate of many.

State legislative acts based upon the National Pure Food and Drug Law were practically nullified in many instances by insertion of amendments absolutely relieving the self-dispensing doctor, dentist or veterinary surgeon of its operations. This faulty legislation, I am pleased to say, is being rapidly remedied in many of

the states. The sale of dope is now being largely controlled by state legislation, but this legislation does not reach the principal evil and that is the interstate traffic, which can only be properly controlled by national legislation, and we all should give our utmost exertions to promote such national legislation as will control this iniquitous traffic. "Where there is a will there is a way," and every honest pharmacist should be willing to be a little troubled in the matter of keeping and transmitting record of his sales of inhibited narcotic drugs so that the National Department may properly and legally control the situation.

Again speaking of endeavoring to do the impractical, I would state that I fully believe the Pure Food Department at Washington is entirely too radical in embracing in the list of inhibited drugs that are used in the preparation of proprietary medicines all those drugs that are known to have or supposed to have narcotic therapeutic effect upon the human economy. We have succeeded in the last five years in almost completely throttling the iniquitous traffic in cocaine. Now why not concentrate our efforts solely upon similar traffic in opium and its derivatives and after we succeed in this laudable effort, combine our efforts upon the next few prominent drugs that are habit-forming and capable of most serious results? Again I repeat we want to accomplish too much at one time, which renders our efforts in a great measure impracticable.

CONFIDENCE TO BE OBSERVED BY PHARMACISTS IN THE MATTER OF PRESCRIPTIONS.

To the Editor: Please let me know what the pharmacist should do under the following conditions: The prescription blanks of Dr. A announce two "associates," Dr. X and Dr. Y. Dr. A asked the pharmacist for a list of patients for whom Dr. X had prescribed, with the dates. Dr. X hearing of the request, advised the druggist that Dr. A had no right to any information concerning prescriptions that Dr. X had written. Some of the prescriptions written by Dr. X are on blanks with his name only at the head. Dr. A asserts that Dr. X has no right to use individual blanks under the terms of their contract. Should the list be furnished to Dr. A?

J. K. S.

ANSWER.—The physician who writes it, the pharmacist who fills it and the patient for whom it was written are the only parties who have any right to a prescription. The fact that Dr. X wrote prescriptions on several kinds of stationery is immaterial. They were all signed by Dr. X and except through the courtesy of Dr. X should not be subjected to inspection. True, the prescription blanks of Dr. A announce that Dr. X and Dr. Y are his "associates," and our correspondent, a pharmacist, has knowledge that some kind of a contract has been entered into by A and X. The terms of the contract are not here defined and the relationship implied in announcing X as an "associate" is too indefinite to warrant the pharmacist giving A information concerning the prescriptions in question. In other words, physicians "associate" in the use of common offices; in assisting each other when more than one person is required to render needed service; in one substituting for the other when the principal attendant is engaged, or on his request; in one performing laboratory work or making special investigations for the other; and occasionally physicians are associated in a full partnership as in any business. Only in a full partnership is one of the associated physicians warranted in treating the business acts—the prescriptions, for example—of the other as his own, or asking another to regard them in this light.

The best course for the pharmacist to follow is to provide X with the data A requests and advise A of this, leaving A to obtain the information from X.—*Journ. A. M. A., Nov. 16, 1912, p. 1813.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

A UNIFORM EXTRACT OF CUDBEAR.

H. V. ARNY, PH. G., PH. D., NEW YORK, N. Y.

After the excellent work done on cudbear during the past year by Raubheimer, Gardner (Druggists Circular 55-1911-518) and especially by Beringer (Journ. A. Ph. A. 1912, p. 820), further reports on this coloring agent would seem at first glance scarcely necessary. But inasmuch as the writer's interest in cudbear is chiefly as referee on the subject for the National Formulary Committee, and especially as the findings of the previous investigators did not lead to a product suitable for the Formulary, the experience of the writer may be worth citing.

As has been elsewhere stated (American Druggist 59-1912-49), the Committee on National Formulary, at a conference held in Boston last August, did not adopt any of the several suggested schemes of standardizing tincture of cudbear by means of colored fluid and requested the sub-committee charged with this particular phase of the work of revision to take up the problem of preparing extracts of uniform tinctorial power.

At the last meeting of this Association, two such extracts were suggested, one alcoholic, the other made with acetone, and the writer has already reported his findings (Practical Druggist, April, 1912, p. 24), on such extracts from four samples of cudbear.

He showed that the alcoholic extracts contained appreciable quantities of the sodium chloride, which is a usual admixture of commercial cudbear, and the strongest of the eleven extracts prepared from the four samples by different means of extraction had five times more tinctorial power than had the weakest. The acetone extracts, suggested by Mr. Gardner, were more uniform. Four extracts from the four samples of cudbear were prepared and while the color of a 1 to 1,500 dilution of the strongest was matched by a dilution of 1 to 1,000 of the weakest, the other two extracts showed similar tinctorial power in dilutions of 1 to 13,000 and 1 to 14,000 respectively. This shows that these acetone extracts are more uniform in color than are those made from alcohol, but the weakest, having only two-thirds the color strength of the strongest, made the practicability of the acetone extracts problematic.

As extraction of cudbear with chloroform in the writer's laboratory showed that that solvent did not remove the purple-red pigment but did extract the

mahogany colored dyes, the plan of extraction of cudbear, first with chloroform and then with acetone, was tried and that with much success.

THE "A. C. A." EXTRACTS.

In the experiments reported in the *Practical Druggist*, of the alcoholic extracts prepared, four were from four different samples of cudbear, made by extracting 100 grams of the coloring agent with cold (U. S. P.) alcohol until 1000 cc. of percolate were obtained, and after recovery of most of the alcohol by distillation, the residue was evaporated on a steam radiator to constant weight.

By this means, four dry extracts were obtained, the yield from the four samples of cudbear being 12.7, 15.1, 18.3 and 12.4 percent. respectively. As mentioned above, these four extracts varied greatly in tinctorial power; the four in dilutions of 1 to 10,000 matching orcein dilutions of 1 to 120,000, 1 to 300,000, 1 to 100,000 and 1 to 160,000 respectively.

Of these alcoholic extracts, the sample from drug No. 1 was used up on fruitless experiments, but 10 grams of each of the extracts, Nos. 2, 3 and 4, were macerated to exhaustion with chloroform and then extracted with acetone. The chloroform extract was of a mahogany-brown tint, turning more or less purplish with ammonia. The acetone dissolved only a part of the residue, the acetone-insoluble part consisting largely of crystals of sodium chloride. The three resulting extracts made by successive use of alcohol, chloroform and acetone will hereafter, in this paper, for the sake of brevity, be called "A. C. A." extracts; ten grams of the three alcoholic extracts yielding respectively 1.42 gm., 1.65 gm., and 1.31 gm. of "A. C. A." extracts Nos. 2, 3 and 4.

THE "C. A." EXTRACTS.

It is plain that the above described "A. C. A." extracts were produced by a cumbersome process and the next step was to see whether initial percolation with alcohol was necessary; so samples of cudbear Nos. 1, 2 and 3 (sample No. 4 having been used up) were directly percolated, first with chloroform and then with acetone. In each case, 100 grams of the dry cudbear were loosely packed in a narrow percolator, fitted with receiving bottle and glass tubes so as to constitute a volatile liquid percolating apparatus, and the sample was percolated to exhaustion with chloroform and then with acetone, the latter solvent being poured directly on the drained drug without the need of removal from percolator and repacking after drying. Of course, the first liquid dropping from the percolator after adding the acetone is the chloroform remaining in the drug, but this can be easily separated as chloroformic extract, inasmuch as the acetone percolate so soon as it reaches the bottom of the percolator, colors the pledget of cotton found there as straining medium, an intense crimson, that is a marked contrast to the practically colorless final portion of the chloroformic percolate.

Both solvents were recovered from their percolates by distillation, and the thin acetic extracts were dried by "scaling." After 24 hours, the scales were dry enough to scrape from the plate and were then dried in air to constant weight. The figures given below as to yield relate to the fully dried extract, and as, of

course, some of the extract adhered to the scaling plates, the yield was somewhat more than here reported.

The following tabulation gives the data of manufacture:

"C. A." EXTRACTS FROM 100 GM. CUDBEAR.

Sample No.	Chloroform Figures			Acetone Figures			Yield Ext. (in gms.)
	cc. Used	cc. Percolate	cc. Distillate	cc. Used	cc. Percolate	cc. Distillate	
1	500.	450.	340.	450.	395.	345.	3.10
2	200.	185.	170.	350.	327.	305.	3.11
3	300.	280.	250.	300.	212.	185.	2.59

From the foregoing, it will be seen that 3.11 gm. "C. A." extract No. 1, was obtained at the cost of 100 gm. cudbear, 160 cc. chloroform and 45 cc. acetone; that 3.10 gm. extract No. 2 was obtained from 100 gm. cudbear with a waste of 30 cc. chloroform and 45 cc. acetone; and that 2.59 gm. "C. A." extract No. 3 meant using 100 gm. cudbear, 50 cc. chloroform and 115 cc. acetone. This means that the finished extract will be rather expensive, but when it is realized that to color a gallon of alkaline antiseptic solution will require one, or at most, two grains of the extract, the initial cost acquires less significance.

PHARMACY OF THE "A. C. A." AND THE "C. A." EXTRACTS.

The finished extracts are reddish-brown granules or scales with a greenish lustre and are very slightly hygroscopic. They do not readily dissolve in water, but are instantly soluble in water containing ammonia, and are very soluble in alcohol. At the beginning of the experiments, ammoniated aqueous solutions were prepared and these on evaporation yielded ammoniated extracts which were instantly soluble in water, but as such extracts were found to lose solubility with aging and consequent loss of ammonia, the use of an alcoholic tincture was found to be a better procedure. Experience showing that there was likelihood of precipitation of some of the color when this alcoholic tincture was diluted with water, a trace of ammonia was added, when the resulting product became freely miscible with water.

So latterly a tincture consisting of the extract, 1 gram; 10 percent. ammonia, 2 cc.; and alcohol to make 1000 cc., was employed.

COLORIMETRIC COMPARISON OF EXTRACTS.

While dilutions of the alcoholic percolates of cudbear matched dilutions of commercial orcein as has been pointed out both by Mr. Beringer and the writer, the pure purple-red pigment of cudbear and likewise the acetone extracts, have a shade quite different from orcein, which therefore cannot be satisfactorily employed as a standard for matching.

Merely as starting point, however, the writer will say that even as he has previously reported that a 1 to 40,000 dilution of orcein roughly matched a 1 to 10,000 of straight acetone extract from cudbear, so he will now report that a freshly prepared 1 to 4,000 dilution of the same orcein roughly matched a 1 to 30,000 dilution of "A. C. A." extract.

Experiments proved that the tints of the dilutions varied not merely as to

whether they were acid or alkaline, but also according to the quantity of ammonia present, and as disregard of degree of alkalinity made the first matchings futile, in those reported below all dilutions were of uniform alkalinity, each being started from 1 cc. of a tincture consisting of the extract (or orcein) 1.0 gm., 10 percent. ammonia, 2 cc., and alcohol to make 1000 cc. In order to avoid variation in ammonia strength, enough of the alkaline menstruum was prepared at one time to make all of the tinctures used at that time.

Finding that attempts to match with orcein were futile, there were prepared 1 to 40,000 dilutions of the six "A. C. A." and "C. A." extracts which were on hand. These, when fresh, so closely simulated each other that a separate set of 1 to 50,000 dilutions were prepared and the twelve fluids, placed in two-ounce tall Blakes, were submitted as unknowns to three observers, whose reports as to color sequence, with darkest first, are given below:

MATCHING "A. C. A." AND "C. A." EXTRACTS.

Observer I	Observer II	Observer III
"A. C. A." No. 2	"A. C. A." No. 2	"A. C. A." No. 2
"C. A." No. 3	"A. C. A." No. 4	"C. A." No. 2
"C. A." No. 1	"C. A." No. 1	"A. C. A." No. 3
"A. C. A." No. 4	"A. C. A." No. 3	"A. C. A." No. 2
"C. A." No. 2	"A. C. A." No. 2	"A. C. A." No. 4
"A. C. A." No. 3	"C. A." No. 2	"C. A." No. 1
	"C. A." No. 3	"C. A." No. 3
"A. C. A." No. 4	"A. C. A." No. 4	"A. C. A." No. 1
"A. C. A." No. 2	"C. A." No. 2	"C. A." No. 2
"C. A." No. 1	"C. A." No. 1	"C. A." No. 3
"A. C. A." No. 3	"A. C. A." No. 3	
"C. A." No. 2		
"C. A." No. 3		

These results are so at variance as to seem worthless at first glance, but careful study shows that they strikingly prove how close is the tinctorial value of the six extracts. In the first place, note that, with the exception of one sample, all of the 1 to 40,000 dilutions were clearly distinguishable from the 1 to 50,000 dilutions, and while two observers placed the "A. C. A." extract No. 2, 1 to 50,000 among the 1 to 40,000 dilutions, the other observer placed it as the second lightest of the 1 to 50,000 dilutions.

As to order of sequence reported by the three observers, let it be understood that all three agreed that the color of the 1 to 50,000 dilutions on one hand and of the 1 to 40,000 on the other (with the one exception cited above) were so close that discernment of difference was scarcely short of guesswork, hence the writer feels justified in employing the adjective "uniform" for the chloroform-acetone extracts which he has prepared.

CONCLUSIONS.

In the writer's hands, uniform cudbear extracts have been prepared by percolating the drug, first with chloroform to remove the brown pigment, and then with acetone: the acetone percolate being distilled and the thin extract thus obtained dried by "scaling."

This extract is soluble in water containing ammonia and in alcohol, and a faintly ammoniacal alcoholic tincture is freely miscible with water.

The tinctorial power of this extract is approximately three times that of a straight acetic extract and about 300 times that of an average sample of tincture of cudbear, N. F.

As to uniformity, six samples of these extracts in a dilution of 1 to 40,000 were practically identical in tint and in intensity.

Of the six extracts just mentioned, three were prepared by making an alcoholic extract, removing the brown pigment from this by maceration with chloroform and extracting the residue with acetone; the acetic solution being then distilled and the residue "scaled." This first step—alcoholic extraction—is, however, superfluous.

COLUMBIA UNIVERSITY, COLLEGE OF PHARMACY, AUGUST, 1912.

THE RED COLORING PRINCIPLE OF CUDBEAR.

ALEXANDER GARDNER, PH. G., BROOKLYN, N. Y.

At the 1911 meeting of the A. Ph. A. held at Boston, a preliminary paper was read and discussed by Alexander Gardner and Otto Raubenheimer in reference to Cudbear. At that time the active principle was extracted by percolating the drug with acetone and evaporating the colate to a soft extract. This process while a step forward in the right direction was afterward abandoned owing to the amount of wax extracted which made the mass undrilyable.

After considerable experimenting by the author, a cheap process was obtained whereby the cudbear was packed firmly in a percolator and percolated with purified petroleum ether until entirely free from wax (which requires about 2500 cc. to 1000 gm. of drug) after which the drug is subjected to desiccation.

The drug is then repacked and percolated with acetone (which will require 2500 cc. acetone for thorough exhaustion). The colate is then placed in a still and the acetone recovered, or it can be evaporated spontaneously, after which the resulting mass is placed in a porcelain capsule and heated to 210 F. for thirty minutes. The mass is then pulverized and placed in a sulphuric acid desiccator for three days during which time it will lose about 25% of its weight.

This extractive I have designated as Persionin.

Persionin is a black lustrous powder with an aromatic odor, soluble in alcohol, glycerin, chloroform, ether, and hydroalcoholic liquids, but is only sparingly soluble in water.

The following has been the yield of 5 samples of drug.

First sample	6.5% of persionin
Second sample	7 % of persionin
Third sample	6 % of persionin
Fourth sample	5 % of persionin
Fifth sample	5.5% of persionin

Each sample of persionin was tested by dissolving 1:100 in alcohol and glycer-

in 3. One cc. of this was added to 99 cc. of distilled water, in each particular the color was the same.

DISCUSSION.

Philip Asher inquired of Prof. Arny whether he had tried his tincture in acid solution, and what the effect was.

L. E. Sayre inquired as to the use of the name, "persionin." It seemed to him very unfortunate. "Persionin" would indicate that a definite principle was had here.

E. F. Cook said there was one point in regard to cudbear which he had not seen brought out by any of the investigators, and that was as to the purification of commercial cudbear by simply removing the sodium chloride, which existed in greatly varying proportions, thus causing a great deal of variation in the tinctorial power of the commercial article. If it was practical, the plan now tentatively adopted by the National Formulary, adding a definite weight of cudbear to preparations and allowing them to macerate twenty-four hours, would probably be as satisfactory as the more elaborate method now proposed.

Answering the question of Prof. Asher as to acid solution, Prof. Arny said he would like to have the experience of some of those who had been working on cudbear, as with most cudbear preparations one of the difficulties to be contended with was their behavior with acid. He was frank to say that the extract he made was precipitated by acids. In trying it out in color matching to which he had given considerable attention, he had discovered that if the menstruum was largely alcoholic it would stand acids. Another point which he had brought out in his paper was one which was generally overlooked in color-matching. In a four-ounce solution, the addition of one drop of five percent ammonia water would make a marked difference in the purple produced.

Answering Prof. Sayre, Prof. Arny said he too desired to enter a protest against Mr. Gardner's use of the word "persionin" for the substance obtained by him. He had given full credit to Mr. Gardner for his work, as could be found from his paper, but it seemed a pity that Mr. Gardner should spoil his acetone extract by giving it a name which was not correct. He (Arny) had simply given a modification of the Gardner process, and the best proof of the relative merits of the two processes lay in the fact that Mr. Gardner said he got a 6% yield of active principle from cudbear, while the yield of Arny's acetone extract was only 3%. Prof. Arny said he would be satisfied to call the product Gardner's acetone extract. Mr. Gardner's paper was too useful a contribution to the literature of this subject to quibble over a point like this, but the name persionin was nevertheless a misnomer.

Answering Prof. Cook, Prof. Arny said he had not tried percolating cudbear with water to extract the sodium chloride, but from the work he had done he was inclined to believe it was not feasible. One of the greatest reasons for the deviation in the tints of cudbear was the brown coloring matter which Mr. Beringer had described before the New Jersey Pharmaceutical Association.

His assistant, Mr. Horstmann, had planned to give a paper on the result of his chemical analyses of the three samples of cudbear which he had brought with him, the first showing thirty-one percent of ash, the second twenty-two percent, and the third only seven percent. This variation in ash content was a sufficient explanation of the variation in color tint. Next year, he said, he hoped to be able to present more fully before the Association this phase of the cudbear question.

E. F. Cook said that very often the difference in tinctorial power of the tincture was due to the fact that pharmacists did not exhaust all the cudbear. This had led him to wonder if percolation was the best way to extract this principle, or whether it was best to extract it with maceration, or by percolation with some inert substance before percolation.

Prof. Arny replied that, adopting a device that Mr. Raubenheimer had suggested, he had no difficulty in percolating cudbear by packing it, not tightly but loosely, when dry. Again referring to the paper read by Mr. Beringer, before the New Jersey Association, he said the author had recommended powdered cork for the percolation of cudbear.

Referring to the matter of cost of his several percolates of cudbear exhibited here, Prof. Arny said that the work was done in the hottest part of the year, and the cost of the first

on the basis of \$2.50 an ounce for the extract was \$1.22 for half an ounce, or 14 grains. The second, which chanced to be made at a cooler time, cost 55 cents for a half ounce, or \$1.10 for the ounce, while the third cost \$1 for half an ounce, or \$2 an ounce. Inasmuch as two grains of the extract was enough to color a gallon of solution, he did not regard the cost as of much consequence. It had about 300 times the power of the ordinary cudbear.

F. W. Nitardy, referring to the question put by Mr. Cook, asked if anyone had ever tried mixing the cudbear with sand before percolating it. He had used that method in the laboratory with fairly good results.

WHAT IS ADULTERATION?

THEODORE J. BRADLEY, BOSTON, MASS.

The title of this paper presents a query that admits of many answers. It is almost like asking "What is a gentleman?" or "What is an education?" questions on which there is a wide difference of opinion, though, fortunately, some definiteness of conception. The popular idea of adulteration is that it always consists of the addition of cheaper ingredients, often harmful, to foods, beverages, drugs, confectionery, and other commodities. Very likely this was the original form of adulteration and it is often practised, but it comes very far from comprising the whole meaning of the word.

The number of causes by which an article may depart from standard quality is large and a complete list of them is difficult to give. The matter is complicated by the fact that several causes may effect a single case and there is much overlapping among them. The following are most important, the examples given being selected from a large number of possible ones, and they are not all from pharmaceutical sources.

I. Admixture with a foreign substance. This is the traditional and direct form of adulteration as exemplified by the crude notion of using sand to adulterate sugar. The dilution of milk with water is a simple and common example of this form of adulteration. It has been carried to ingenious lengths, as in the manufacture of cheese from skimmed milk which contains oleomargarine added to replace the butter fat.

II. Abstraction of valuable constituents, as the selling of spices and drugs from which important constituents have been extracted; of skimmed milk as whole milk, and many other instances.

III. Sale of an imitation for the genuine article, as colored diluted acetic acid for cider vinegar, colored diluted alcohol for whiskey, butterine for butter, acidulated solution of epsom salts for citrate of magnesia, etc. Some of these artificial products had such an illegitimate birth as this, but have become well known and now have a market of their own.

IV. Substitution, or the sale of one article under the name of another. This closely resembles the preceding but differs enough from it to be considered separately. We must confess that pharmacists have frequently been sinners in this respect. Examples are found in the sale of carbolic acid for creosote, acid phosphate of lime and other chemicals for cream of tartar, various coal-tar products for each other, and so on.

V. Variation from standard strength, as in the case of many pharmaceuticals like the diluted acids and various galenicals having a standard alkaloidal strength. It is important to remember that too great a strength is as objectionable as the other.

VI. Offering for sale of deteriorated or decomposed articles, as diluted hydrocyanic acid, spirit of nitrous ether and other drugs which have lost their strength, more or less completely, and decomposed meats and other food products, including ice cream containing the deadly ptomains.

VII. Flavoring, coloring, or otherwise treating an article of inferior quality to make it appear to be of superior quality and selling it as such. An example of this is found in the so-called "renovated" butter which is low grade butter melted, washed with soda and otherwise made over.

VIII. Addition of harmful preservatives or coloring agents, many of which are likely to be used in canned and bottled goods of all kinds, and in pastry.

IX. Variation from standard quality because of improper or incomplete methods of manufacture, as the omission of the necessary aging of whiskey, the incomplete extraction of drugs and other instances. This also includes the failure to standardize certain preparations after manufacture, if this is called for.

X. Shortage of weight or measure. The common custom of calling twenty-four ounces a quart in bottling wines, and using the liquid quart in place of the dry quart are examples of this. Short weight seidlitz powders are familiar to some pharmacists.

XI. Failure to properly label when there is any ingredient present whose nature or amount should be stated, as in preparations containing morphine and some other alkaloids and preparations containing alcohol. Imitations, substitutions, and failures to properly label are all referred to as "Misbranding."

This is a formidable list, and it is not easy to give a brief definition of adulteration, though one is needed. Perhaps the best short definition that can be given is about like this:

A substance is adulterated when it differs in any respect from the properties, strength or quality which have been defined by some competent authority.

In the case of drugs the principal authorities are the United States Pharmacopoeia, and the National Formulary, and the National Board of Food and Drug Inspectors.

The present widespread agitation against adulteration was begun about fifteen years ago, probably because of the so-called "embalmed" beef furnished to our soldiers during the Spanish war. There are great copy making possibilities in the subject that appeal to the sensational writer, so the newspapers and magazines have been flooded with articles on it. This is of advantage in awakening and educating the public on the matter, but no one should allow himself to be misled into believing that all foods, drugs, beverages and confectionery, nowadays, are subject to adulteration, harmful or otherwise. To those who are informed on the conditions existing twenty-five and more years ago, the present outcry is like setting a trap after the game has taken the bait. It is a comforting fact that, with the exception of milk and its products, comparatively few cases of the adulteration of staple foods are found at the present time. When Massachusetts,

New York and other states began investigating and regulating adulteration, in the early eighties, conditions were indeed bad and a great deal of time could be spent in citing old instances of adulteration by the crudest of methods. This, however, is now a matter of history and it is enough to say that the persistent campaign begun then, and continued until the present, has greatly reduced the number and kind of offenses of this sort, but it has not entirely done away with them.

Like all callings, pharmacy has men of many kinds within its ranks, and among them there have been some who have been deliberate adulterators, but, after more than ten years' experience in a state laboratory having charge of the inspection and control of the quality of the drugs sold in the state, the writer is firmly convinced that the pharmacist is very seldom a deliberate adulterator of his wares. On the other hand, because of carelessness or ignorance, he frequently sells or dispenses goods that are adulterated and it is difficult to make some pharmacists understand that they are responsible for this adulteration whether it is deliberate or not.

The enforcement of laws regulating adulteration should be carried out with great discretion by men well informed on the subject. A distinction between deliberate or harmful adulteration and gross carelessness or negligence on the one hand, and unintentional and inoffensive slight variation from standards, due to oversight, on the other, must be made. The sensationalist or over-zealous man in office, by a mechanical enforcement of laws and regulations, often does great injustice to men who are essentially innocent of any wrong. Fortunately such officers are not often upheld by the public and their careers are short, but some individuals may suffer greatly because of their misdirected zeal. The rational method of dealing with the subject is to prosecute and punish, ordinarily, only the persistent and deliberate and serious offenders. It is a fact that notification to the pharmacist of his offense is nearly always sufficient to stop a particular case of adulteration and it amounts to a persecution to severely punish a man who is anxious to do the right thing and only needs to have his error pointed out to him to induce an avoidance of it thereafter. This, of course, does not excuse the error which might result in harm to someone, but a distinction must be made between the degrees of an offense.

The pharmacist's position is a perplexing one, but not hopeless by any means. Of the various forms of adulteration, several are only likely by deliberate action. Those that are most troublesome are variation from standard strength, and inferior quality due to deterioration. It is not possible to shift the responsibility to the manufacturer or wholesaler in many cases. There is but one solution to the problem of how to deal with adulteration and that is found in eternal vigilance backed up by a large stock of information on the subject acquired by thorough training in our profession and constant reading of periodicals and newspapers.

MASSACHUSETTS COLLEGE OF PHARMACY, July, 1912.

DISCUSSION.

W. A. Puckner said he was pleased to hear one statement by the writer which agreed with a statement that he had recently made, viz.: that largely-used articles, whether medicines, foods or other commodities were likely to be pure. Where there is great competition a good

product will be put on the market and purchased. This was one of the arguments which the Council on Pharmacy and Chemistry of the American Medical Association used in its propaganda for a restricted materia medica. Pharmacists should use only those drugs which are known to be good. If it was true that the preparations spoken of by the writer contained half a dozen different kinds of hypophosphites and acids, it showed that as to these very complex preparations the pharmacist sat upon a regular "dynamite mine," which was liable to explode at any time. He was using hundreds of drugs regarding the quality of which he was absolutely ignorant, and which he could not take the time to examine, and this was one reason why pharmacists should aid in the propaganda to restrict the medicaments used by the medical profession—to get away from complex mixtures, and stick to simple remedies.

G. H. P. Lichthardt heartily agreed with the statement that most of the adulteration in pharmacy was due to carelessness. He had occasion several years to examine certain specimens of citrate of magnesia, and had found in every case that their makers were using the old formula, having forgotten the extra acid added in the last revision of the formula. He believed this was happening every day. In his state where he had been engaged in this work for four or five years past, he had found pharmacists as a rule only too willing to cooperate with the authorities in the effort to keep down adulteration.

L. E. Sayre desired to call attention to the paragraph reading: "A substance is adulterated when it differs in any respect from the properties, strength, or quality, which have been defined by some competent authority." This, he said, was a very acceptable, condensed, definition of a standard for the administration of Food and Drugs Laws. This definition was especially valuable because frequently the administrators of the law were confronted with the question of standard where no definition adequate was found in the Pharmacopœia or National Formulary. Where a preparation was evidently adulterated and no recorded standard, such a standard would be valuable. It was not a question of wishing to prosecute vendors, but to stop the sale of adulterated preparations. A number of preparations had come to his laboratory where there was no definition or test in the Pharmacopœia or in the National Formulary by which to check their quality. If the above standard were applied it would serve a good purpose. Mr. Sayre said he thought there was a great opportunity here for applying the proposed tests. If an authority could be produced that would set a standard for a particular article, it would be greatly to the advantage of the administrators of the law and to pharmacy.

C. G. Clayton called attention to the duplication, or practical duplication, of names and formulas which had been suggested by the last two papers. Mr. Sass had displayed a specimen of elixir of iron, quinine and strychnine phosphates, and he had turned to a brother pharmacist at his side and asked if he had ever used that formula, eliciting the response that he used nothing except the elixir made from tincture of chloride of iron. He thought it inexcusable that, when one of these elixirs was prescribed, the other should be given; yet, when there was so nearly a duplication of names and formulas, with practically the same therapeutic effect, it was liable to create confusion in the minds of many dispensers. He thought this point worth considering by the compilers of the U. S. P. and N. F.

F. F. Gordon said he thought possibly it might be a good idea for this Section to go on record as defining the word "adulteration" in the words just read by Mr. Sayre from Mr. Bradley's paper, after which the matter might be referred to the Council for action, so that the Association itself might be placed on record as giving a clear and plain definition of the word "adulteration."

Caswell A. Mayo moved as a substitute that the definition of the word "adulteration" as set forth in Mr. Bradley's paper be recommended for consideration by the Committee on Resolutions of the House of Delegates.

The substitute was accepted by Mr. Gordon, and on motion was adopted.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

THE NAVAL APOTHECARY SINCE THE CIVIL WAR—SOME HISTORICAL DATA AND PERSONAL REMINISCENCES.

FREDERICK T. GORDON, PHARMACIST, U. S. NAVY, RETIRED.

There have been such changes in the rank, status and duties of the naval apothecary since the days following the Civil War and there are so few of us old apothecaries left whose experience goes back to the times of the "old Navy," that I gladly comply with the request of the secretary of this Section to present what data I can of historical value to the Association. History is made up of dates, but history is chiefly interesting not on account of these dates but because of what people did on those dates, so at the risk of making my contribution more personal and reminiscent than statistical I will try to tell what the naval apothecary was, what he had to do and how he lived in the past and what he now is and does. Conditions are so different now from what they were when I first entered the service that the only comparison I can think of is the comparison of the ships themselves on which the apothecary serves, the difference between the old ship rigged auxiliary wooden corvette on which the life was about as leisurely as was the speed of the vessel herself and the modern dreadnaught whose crew are but the attendants of guns and machinery and where everything is done on schedule time and by scientific methods. The romance, if there was any, seems to have gone with the masts and spars of the old ships, the present day battleship makes as regular a schedule between ports as does a passenger liner and it is simply a question of burning coal to get anywhere. We had to wait until wind and water served, counting months at sea as one of the things that had to be endured as part of the regular course of events.

The status of the naval apothecary in the early days was considerably different from that of today; then he was practically a civil employee, subject of course to naval discipline; now he is a member of a highly trained organized corps and an integral part of the personnel of the navy. Then the apothecary was appointed by the ship's medical officer for the "cruise" or such time as his services were needed; he was not required to enlist for any definite time and in fact often did not enlist at all but simply held his billet as ship's apothecary at the pleasure of the medical officer and captain of the vessel on which he served. He had no benefit from continuous service, was not eligible for retirement and there was no promotion for him; in fact his tenure of office depended entirely upon the time of commission of the vessel on which he served. The rank of the apothecary was then, as now, that of chief petty officer and he was allowed a ration and was paid \$30 a month. This was the apothecary afloat. On shore the condition was similar.

The apothecaries of navy yards and hospitals were really civil appointees, they were not required to wear uniforms and had the same status as other civil employees in regard to tenure of office and discipline. Their appointment was mostly by favor, that is when a vacancy occurred the medical officer of the navy yard or hospital selected some man known to him for the position and recommended his appointment, his recommendation usually being ratified by the authorities above. He had no status in a military sense, was not eligible for a pension except as having served during the Civil War and his appointment could be cancelled at any time. In fact he was carried on the payrolls as a civil employee and was considered as such in all respects. The only difference between the man ashore and the one afloat was that the former was treated as an enlisted man.

This was the condition when I entered the navy in 1890, with this difference, many apothecaries serving afloat were then taking advantage of the privilege of enlisting for regular service and thus being eligible for the benefits of continuous service and definite time of enlistment. The new entrant was compelled to enlist in the lowest rating of the "landsmen" branch, that of landsman, pay \$16 per month, depending upon the appointment of the medical officer of the ship to which he was assigned to secure the rating of apothecary, this appointment requiring only ratification of the commanding officer of the vessel and was only for the time the apothecary served on that ship. In 1893, I think, the Navy Department inaugurated a plan for providing for permanent service of petty officers, of which the apothecary was one, this consisting of a provisional warrant issued to men serving in the various ratings confirming them in their rate for one year, this warrant becoming permanent after one year's service in that rating on recommendation of the commanding officer. This was a great advance, for when the apothecary once obtained his warrant as a chief petty officer it was permanent during good behavior and on the expiration of his enlistment he was given an honorable discharge which entitled him to re-enlist as apothecary with increase of pay. Before this the man re-enlisting as apothecary had to enlist as originally, as a landsman, and take his chances of an early appointment to apothecary, sometimes having to remain on a receiving ship for months at the munificent pay of \$16 a month. The pay of apothecaries continued to be \$60 a month, with an added dollar per month for each re-enlistment. There was no promotion, the only fruit of long service being the reward of an assignment to a receiving ship, where one could go ashore nightly.

These rather indefinite conditions were all changed by the Hospital Corps bill of 1898 which for the first time established a definite organization for the Hospital Corps of the Navy and made it a part of the regular naval personnel. The rank of pharmacist, that of warrant officer, was created by this bill and all apothecaries were required to enlist, no matter where they served, and similar provision was made for the nurses, baymen as they were called in the olden days. This reform put the Hospital Corps on a practical basis and made the position of naval apothecary a definite one, with uniform requirements and status, and opened the door to promotion to officer's rank for the man enlisted in its ranks. Since then the organization of the Hospital Corps has been more and more perfected and its high standards of professional requirements and its definite promise of rewards for good conduct and work made it far more attractive to the young graduate in

pharmacy than did the uncertain conditions and future of years ago. The present pay of the hospital steward, the title now given to the naval apothecary, is \$70 a month, with an allowance for uniforms on original enlistment and the usual navy ration allowance of 30 cents a day. He enlists for four years, after passing a physical and professional examination, and receives a permanent appointment to the rating after one year's good service and may be assigned to duty either ashore or afloat. After eight or ten years' service he stands a good chance for appointment as pharmacist, ranking as a warrant officer and receiving pay amounting to \$1400 to \$2000 a year and an allowance for quarters when on shore duty. As pharmacist he is eligible to retirement after forty years' service, or at the age of sixty-two, on three-quarters of his pay and allowances for life. Hospital stewards are eligible for retirement on three-quarters pay, etc., after thirty years' service. Quite an improvement.

Conditions of life aboard ship have changed even more than conditions of rank and status. When I entered the navy in 1890 we were just beginning to build steel warships and had a few cruisers which we fondly christened the "New Navy." Except that the new ships were built of steel and the old ones of wood, there was little difference between them as regards equipment and conveniences. Both were fully rigged with masts and sails and the majority of the crews were still sailors, not gunners and mechanics, as are the men of the battleships of today; and living quarters, ways of living and things generally were pretty much the same. The sick bay, the space set aside for the sick, was still usually a space in the very bows of the ship separated from the crew's living quarters by a bulkhead and the dispensary where the apothecary did his work was merely a small cell-like space either alongside the sick bay or somewhere on the berth deck out of the way. There was no such thing as an operating room dreamed of in those days; when an operation *had* to be performed the long table in the sick bay was covered with a rubber sheet and the surgeon proceeded to do the best he could, the apothecary acting as assistant. When a man was too sick to work, his hammock was slung on hooks in the sick bay and he was nursed as best one could, fed with "grub" from his mess unless very sick, and then with food from the officers' mess and washed when required with a sponge and bucket of water. If the man had a broken leg the best we could do was to lay his hammock on deck with perhaps an extra mattress; later we had swinging canvas cots which were an improvement but a nuisance both to patient and caretakers. Toilet facilities were usually a covered bucket; ventilation, when there was any, came through a hatch opening to the deck above, unless we were in port and could open the port-holes, and light came from oil lanterns at night.

The dispensary, as I have mentioned, was a small place with a work counter on one side, above which were racks of bottles and in drawers below, space for keeping various articles of stock, and a locker with shelves on the other side. This locker usually had a folding seat or sometimes a permanent ledge about a foot wide, where patients might be seated for examination during the day and on which the apothecary made his bed as best he could at night. Some of the old ships actually had bunks for the apothecary, and I remember with what jealousy I saw the palatial couch of the Charleston and compared it with the two-foot plank that I had rigged up for my bed. The dispensary on the first vessel on which I served

was directly over the ship's boilers and when we were at sea under steam the dispensary became so hot that candles would melt and run together. Then I would take my hammock and mattress and sleep on deck in the coolest place I could find. Our supplies were very limited, mostly staple drugs and a few fluidextracts and tinctures. Pills when called for we made, capsules were a luxury only for the few, and "elegant" pharmaceuticals were unknown. In my first supplies I had fluidextracts made by Squibb as far back as 1870, but as they were never used, I have no idea of their efficiency at the age they then were. Everything was the simplest and crudest, the scales, for example, being the old style swinging balance on which it was impossible to weigh anything when the ship was at sea and rolling around. We got so skillful that we could guess weights within five or ten grains and let it go at that, of course being more careful with potent drugs, morphine, for instance, which I have known to be measured on the point of a knife blade in emergency. Yet we had few sick and most of them got well. The nursing of the sick was equally crude, the nurses, baymen as they were then called, were usually men who were assigned for that duty because they were worthless about decks and had about as much idea of sick nursing as they had of theology. My first two nurses were an ex-cavalry sergeant and a marine detailed for the duty as being too stupid for even a marine's duties, their sole ideas of nursing consisting of giving patients their medicine in liberal doses and taking their temperatures.

In those days water was the most envied possession on shipboard, all of our fresh water being carried in tanks replenished at intervals from the shore or when at sea from condensers, and I was an envied one because I could generally get an extra gallon or two of fresh water from the hold on plea of needing it for the sick. Now fresh water may not seem of much importance to the landsman, neither is it so precious aboard ship these days, but then fresh water was a luxury. Not only did we have to use salt water for washing clothes but for personal cleanliness as well, and salt water in the long run is not conducive to comfort. We used to wash carefully in a panful of water, saving this daily until we had a bucketful and then use that for the first washing of our clothes, after which salt water had to be used for the rinsing, as every man was his own laundry then. Similarly, in the dispensary my accommodations were a wash basin and pitcher and a bucket, and these had to be used for all purposes. Hot water was obtained painfully by means of a pan and an alcohol lamp. As with water so it was with everything, there was just so much of a thing and when that was used you had to do without. If our supply of one drug was exhausted we used the next best until we could get fresh supplies and the substitution that we had to do would shock an ethical pharmacist into his grave. Often have I made blue ointment and protoiodide of mercury from iodine and quicksilver.

Nowadays the sick bay of a battleship is like the ward of a modern hospital, comfortable cots, bath rooms, unlimited water, electric lights and unlimited fresh air from separate ventilators. In my time we had to use lard oil lamps and lanterns and often the air in the sick bay was so foul that aromatic oils had to be sprayed around to make it possible to stay there at all. The sick bay is heated in cold weather by steam, there are electric fans for hot weather and everything possible is done for the care and comfort of the sick, including prepared foods and special diets supplied direct from the ship's kitchen. The nurses, too, are

now trained men and are as competent and skillful as the nurses of any hospital ashore. In place of the old table and rubber sheet there is now a complete operating room, isolated from the sick bay, equipped with every modern appliance and in which it is possible to perform the most serious or the most delicate operations. The dispensary is equipped with modern conveniences, even a typewriter now being usual, and the medical supplies are not only liberal in quantity but contain such items as diphtheria and typhoid antitoxins and most of the tested and approved remedies of the modern materia medica. In brief the difference is just about the same as between the old days in the drug store when the apothecary made everything and now when everything is made for him.

The duties of the naval apothecary while still fundamentally the same, the preparation and dispensing of medicines and participation in drills, are now vastly increased over those of the old days. Not only has the advance in equipment and materials necessitated more duties, but the highly technical character of everything aboard a battleship has necessitated better training and knowledge of many more things than we old apothecaries were expected to know or do.

The old apothecary was expected to be a good apothecary, a fair penman and a man of good general intelligence, anything more than this was supplied at his own volition. He was expected to have general supervision of the nursing of the sick and was generally the surgeon's assistant during operations and attended to minor cases, applied dressing etc. In addition to all these duties the present day apothecary must have knowledge of modern hygiene and hospital practice, must be capable of performing chemical analyses, assisting in bacteriological examinations and must be thoroughly familiar with the various drills and practices incident to caring for the wounded in action made so vitally necessary by the conditions of modern warfare. Nowadays the battleship's equipment contains what is practically a complete chemical and bacteriological laboratory equipment and analyses are made in routine work of water, foods, supplies of all kinds and various materials in addition to the usual analyses of urine, faeces, etc. and bacteriological examinations are of frequent occurrence. My chief chemical work used to be testing the fresh water from the condensers to determine its potability, this depending upon whether it became turbid or not on addition of a solution of silver nitrate. There were occasional rough examinations of urine and once in a while a call for testing some article purchased ashore, and, I had almost forgotten it, so long ago has it been abandoned, a weekly testing of the air on the berth deck to determine the amount of carbon dioxide it contained. This was done by drawing air through lime water in a big bottle and then determining the amount of calcium hydroxide left, the method being capable of fairly accurate results but as usually done being more or less of a guess. Apparatus we had not except such as was used in dispensing and a few test tubes.

The present duties of the apothecary at shore stations and naval hospitals includes even more technical work than is required from him when aboard ship. In addition to having charge of the dispensary he has general supervision of the nurses and kitchens, acts as purveyor of stores, superintends the purchase of fresh meats, provisions, etc. and does the general bookkeeping of the station. He is often called on to make X-ray examinations, chemical analyses and assist in bacteriological work and at times to assist the surgeon as anaesthetist during

operations. There is now a training school for hospital stewards as well as for the nurses of the Hospital Corps, and every newly enlisted man is sent to this school as early as convenient for instruction, and is also assigned to a hospital for a time before being sent to sea. The requirements for appointment as hospital steward from civil life include a good general education as well as thorough acquaintance with the professional side, and graduation from a college of pharmacy is one of the essentials. Hospital stewards are also appointed from the ranks of the Hospital Corps, hospital apprentices these men are called, a hospital apprentice being eligible to promotion to hospital steward after two years' service in the various grades, provided that he can pass the rigid professional and general examination. This condition too is far different from olden times when favor and personal acquaintance counted far more than merit.

There is one chapter in the history of the Naval apothecary since the Civil War that cannot be passed by unnoted, that is the splendid showing the naval apothecaries made during the Spanish War in spite of being suddenly called upon to fill new and responsible positions and to perform unaccustomed duties. Of course most of us had at one time or another come in contact with conditions of actual warfare during cruises in the Far East and in Central American waters, but this duty was usually performed in company with a medical officer from the ship who would be in charge of the landing party. Personally I have had experience in several Central American revolutions and once helped establish a field hospital for the wounded in a battle fought near Bocas del Toro, Costa Rica, but I had only the responsibility for the equipment and minor operations whereas the apothecaries in many instances during the Spanish War were doctor, surgeon, apothecary and nurse all in one and had to meet emergencies unaided. At the beginning of the war there was such a shortage in the Medical Corps that it was necessary to put apothecaries on many of the smaller auxiliary vessels, tugs, colliers, etc., as medical officers, and the entire care and responsibility for the health and hygiene of the crew fell on the apothecary. Some of the men did remarkable work, such as reducing strangulated hernia, setting fractured limbs, and ligating severed blood vessels, and all but very few of them rose to the occasion and won high commendation for their diagnoses of disease and treatment of the sick and wounded under their care. Of course at times it was possible to call upon a regular medical officer when in company with larger vessels, but often for weeks the apothecary had no one to help him and had to depend upon his own skill and good judgment. The fine record made is all the more remarkable because of the fact that many of these apothecaries were green men, that is newly enlisted, and outside of their college education and drug store experience had had little training in caring for sick and wounded. The medical outfit they had was confined to the most essential drugs and surgical dressings, a book of instructions and such extra supplies as could be obtained from time to time.

Their service was all the more arduous and responsible too because of having to care for crews themselves chiefly recruits and because of the small size and character of most of the vessels and that they did so well is a splendid exhibition of the patriotism and devotion of the apothecaries who answered their country's call for service.

The life of the naval apothecary nowadays is far more comfortable and more

pleasant than in the olden days, there are few long sea trips and the vessels themselves are so well equipped in every way. Every battleship now has its cold storage rooms, and fresh meats and provisions are as common as they used to be scarce; ice is fairly plentiful and so is fresh water, trained cooks have supplanted the old "mess cook" and fresh bread is baked daily and the food supplied is better than at many boarding houses. Salt horse and hard tack are now largely curiosities and there is a howl from the crew if pie is not served them at least three times a week. In other personal comforts things have changed for the better; the ventilation is good and the sleeping quarters of the apothecary is equipped with a comfortable bunk, he has electric lights to read by and can take a shower bath whenever he wants to. Even in amusements times have changed. Our music, if we had any, was afforded by amateur talent on accordeon or banjo, but the apothecary today can listen to the latest ragtime, or play it himself, on a player piano while most of the ships have their own band. Each ship now carries an excellent library, newspapers and magazines are frequent and mails are frequent, something we oldtimers were deprived of. I could go on this way recalling contrasts and incidents for hours but I am afraid that I have already taken up too much time with reminiscences which however interesting to me may not be thought so by others, so will bring my "log" to a close. Just one more word—if the times have changed and methods with them, the naval apothecary has kept up with the Navy and the men of today are just as skilled and highly trained as those of any other branch of the service. The naval apothecary doesn't carry sails now either.

IMPORTANT DATES IN THE CHRONOLOGY OF PHARMACY.

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B. C. 3500. Is date of the oldest prescription, written on Egyptian stone, which is in the Metropolitan Museum of Art, N. Y.

B. C. 2000. Chinese knew Rhubarb, Aconite, Bark of Pomegranate, Ergot of Rye, Camphor, and Canella.

B. C. 2100. King Osimandias (Egypt) wrote above his library "The pharmacy of the soul," another rendering is "The office of remedies for diseases of the soul."

About this period pharmacy was separated from medicine in Egypt.

B. C. 1700 to 1400. There are three Egyptian papyrus, that are as much pharmacopoeias as medical treatises, one mentions fifty vegetable substances, another sixty, that were used medicinally, besides those from animals and minerals.

Ointments, clysters, and poultices are mentioned.

They appealed to the god who will "slay the slayer."

B. C. 1490 and 1000. The Bible mentions the art of the apothecary or perfumer. Moses probably had this from papyrus mentioned above, which he is supposed to have studied.

Apothecary and perfumer were one in Egypt.

B. C. 1300. Chiron, Esculapius and his two sons, this date is an average of nine estimates.

B. C. 460-327. Hippocrates.

B. C. 132-63. Mithriades and his Mithridate or Theriac.

A. D. 50. Celsus wrote an account of the medical system of his time.

A. D. 65. Pliny wrote a *materia medica*.

A. D. 100. Dioscorides wrote a treatise on *materia medica* and edited a *pharmacopoeia*.

A. D. 117. In Baden near Zurich there were found Roman ruins containing medical pharmaceutical and surgical appliances, medical spoons in bone and silver, measuring vessels, jars and pots, some containing traces of ointments; the latest coins found were those of Hadrian.

A. D. 130. Galen laid the foundation for galenicals.

A. D. 650. The University of Salerno early in the seventh century taught pharmacy and the separation of medicine and pharmacy.

Nicholas Praepositus of Salerno wrote a *pharmacopoeia*.

Great advancement in pharmacy made at Salerno in the sixteenth century.

A. D. 750. Early in the eighth century Al Mansur established a pharmacy.

A. D. 806. Arabs produced a *pharmacopoeia* and established apothecary shops.

A. D. 829. Monastery of St. Gall had plans for a hospital and pharmacy.

A. D. 857. Schools of pharmacy arose in the chief Moslem cities.

Mesua became celebrated for his knowledge of drugs.

Mesua, the younger, of Damascus wrote "*De Simplicis*" which was used in forming the first English *pharmacopoeia*, 1618.

A. D. 949. Cordova made advancement in medicine greater than any since Galen.

Ibn Beytar the botanist, traveled all over the East to find medicinal herbs, on which he wrote an exhaustive treatise.

A. D. 1050. Monte Cassino, near Naples had a monastery hospital, infirmary and pharmacy.

A. D. 1145. St. Hildegard prepared a *materia medica*.

A. D. 1225. St. Elizabeth of Hungary established a sisterhood to nurse the sick and had a sisterhood pharmacy.

A. D. 1241. Frederick Domkellar presented his apothecary shop to the monastery of St. Thomas.

A. D. 1250. Established a drug store, privileges protected by government in Germany and France.

A. D. 1307. In Ragusa, Dalmatia is now a San Fransiscan pharmacy established in 1307. It has the pots and vases which held the herbs and simples from earliest times.

The labels burned into the pottery yet survive.

Ragusa claims to be the birthplace of Esculapius.

A. D. 1534. The Jesuits established pharmacies in their houses.

A. D. 1535. Henry VIII amused himself making cramp rings, plasters and compounding medicines.

He left a M. S. "*A Book of Plasters, Spasm Drops, Ointments, and Poultices. Devysed by the King's Majestie (and four physicians).*"

A. D. 1535. A cousin of Anne Boleyn was an apothecary.

A. D. 1535. One of Cartier's crew was Francois Guileadt, "apotecaire."

A. D. 1540. The citizens of London agreed to buy for St. Bartholomew's Hospital all manner of apothecary wares and all that was necessary for making salves and all other things touching physic or surgery.

A. D. 1606. Louis Hebert, apothecary, came from France, and in 1616 returned and brought out his family.

A. D. 1613. Besler, a pharmacist of Nuremberg, published a work on botany.

A. D. 1625. Dalmahoy kept a shop on Ludgate Hill, where he sold drugs, potions, electuaries, powders, sweetmeats, wares for the complexion, scented hair oil pomades, dentifrices, love charms, Italian masks to sleep in, spermaceti salts, scammony and squills.

A. D. 1646. An apothecary of Boston obtained permission to build a paling.

A. D. 1698. An English physician reported Paris apothecary shops neat enough, if they were as well stored with medicines.

Some are finely adorned and have an air of greatness, vases of copper in niches of windows, within are mortars of brass as well for sight as use.

A. D. 1716. Douglas, an apothecary, was raised to the peerage, the wags said:

"In your arms rather quarter
A pestle and mortar
And your crest be a spruce gallipot."

A. D. 1729. Smithson, an apothecary, became a baron and son-in-law to a duke.

A. D. 1732. Thomas Harwood of Boston wrote a treatise on pharmacy.

A. D. 1785. Stark's Pharmacy, London, established, yet in business.

A. D. 1851. Organization of the American Pharmaceutical Association.

A. D. 1912. Publication of the Journal of the American Pharmaceutical Association.

A. D. 1912. Sixtieth anniversary of the A. Ph. A.

Contributed and Selected

NOTES ON CHEMICAL TESTS OF THE UNITED STATES PHARMACOPOEIA.

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(Continued from page 1273.)

HYDRASTINA.—The melting point of the U. S. P. is the same as given by some authorities for the chemically pure alkaloid and medicinal specimens must be expected to vary somewhat from this figure, especially since allowance of appreciable quantities of impurities is implied by the description "white to creamy-white." The intention of the test for distinction from hydrastinine is not stated clearly enough; a solution of 0.1 gm. of hydrastine in 10 cc. of diluted sulphuric acid develops a blue fluorescence on addition of a few drops of N/10 potassium permanganate, but no fluorescence should be visible before addition of the reagent. Some authorities give a test for berberine; an aqueous solution of hydrastine (1 in 20), made with aid of a slight excess of hydrochloric acid, should not be reddened by addition of chlorine water.

HYOSCYNAE HYDROBROMIDUM.—While the U. S. P. does not explicitly specify the laevorotatory modification, the melting point given practically excludes the optically inactive form. Since, however, determinations of melting points as high as 190° are notoriously untrustworthy, it may be advisable for the U. S. P. to require definite limits of optical rotation, to exclude excessive quantities of the optically inactive *i*-scopolamine. The German Pharmacopoeia directs a test for apatropine, as follows: A mixture of 5 cc. of a 1 percent. water-solution of the salt and a drop of a water-solution of potassium permanganate (1 in 1000) should not be completely decolorized within 5 minutes. The sulphuric acid test for "carbonizable impurities" should be made with about 0.1 gm. of the salt and 1 cc. of the acid. In the test for morphine, a rather superfluous test, "any color" should be changed to "a dark red color," as an orange color is produced with the pure salt, due to liberation of bromine.

ODOFORMUM.—A test for alkalis, as well as for acids, should be made with litmus paper. Adulteration with sulphur, sometimes reported, may be detected by dissolving the sample in alcohol, in which sulphur is nearly insoluble.

IODUM.—The specific gravity is, of course, to be regarded only as a statement of one of the physical characteristics of chemically pure iodine and not as a rigid requirement, but this, as in many similar cases, should be indicated by the diction or by a general explanation in an appropriate place. Instead of the statement, "leaving no residue" a requirement of a limit of 0.1 percent. of non-volatile matter should be made. The statement under "Assay," that titration with thiosul-

phate, with the prescribed calculation of results, gives the percentage of pure iodine, is not strictly accurate, as it ignores the ever-present iodine chloride; specimens containing this impurity within allowed limits sometimes test as high as 100.5 percent, by the official method.

LIQUOR ACIDI ARSENI.—To allow for unavoidable slight inaccuracies in the weighing of ingredients, loss in handling, deterioration on keeping, etc., a slight variation in strength should be officially recognized. The "rubric" calls for an *inflexible* 1 percent, and the assay for a *minimum* of 1 percent of As_2O_3 . The former is, strictly speaking, a requirement of an impossibility, while the latter is an unsafe one, as it provides no *upper* limit. A requirement that the solution contain not less than 0.98 and not more than 1.01 percent of As_2O_3 would probably be acceptable to everybody concerned.

LIQUOR ARSENI ET HYDRARGYRI IODIDI.—The remarks under the preceding apply also to the arsenic and mercury contents of this preparation and official methods for their quantitative determination should be provided; additional determination of the iodine is also desirable.

LIQUOR FERRI SUBSULPHATIS.—A more reliable means for distinguishing this from the official solution of normal ferric sulphate should replace the time-honored test with sulphuric acid, which has been found misleading. The following simple test has been found more satisfactory: A mixture of 1 cc. of the solution and 40 cc. of water is heated until it begins to boil; a turbid mixture is obtained with the subsulphate, a clear solution with the tersulphate solution.

LIQUOR FORMALDEHYDI.—This solution, as found in commerce, contains a variable quantity, up to 14 percent., of methyl alcohol, the presence of which is not only unobjectionable but desirable, as it retards or prevents formation of para-formaldehyde. For this reason the specific gravity of solutions of official strength is often considerably lower than the U. S. P. limits, sometimes as low as 1.064 at 25°. The products obtainable in this market almost always contain traces of calcium sulphate, which is not allowed by the U. S. P., but to which no valid objection can be made.

LIQUOR HYDRARGYRI NITRATIS.—The percentage of mercury is determined most conveniently by titration with N/10 sulphocyanate, with ferric alum as indicator.

LIQUOR PLUMBI SUBACETATIS.—When adjusted to the required lead content by the official assay method, the specific gravity of the solution has been found to vary from 1.235 to 1.250 at 25°.

LIQUOR POTASSII ARSENI.—The comments under *Liquor Acidi Arsenosi* regarding the arsenic content apply here also.

LITHII BENZOAS.—In testing this and other official lithium salts for other alkalis, amyl alcohol boiling between 128° and 132° has been found as serviceable as the specified article boiling at 132°, which is not readily obtainable. For the quantitative conversion of this and other official lithium salts, sulphuric and nitric acids, as directed in the U. S. P. under *Lithium Citrate*, have been found preferable to ammonium sulphate. It is advisable also to use platinum instead of porcelain crucibles for such tests, because of the reaction of lithium carbonate with silicates at high temperature.

LITHII BROMIDUM.—The salt is not always alkaline, as stated, but is neutral when free from an excess of alkali or acid. For titration with silver nitrate it should be dried to a constant weight at 150° and no attempt should be made to weigh exactly 1 gm. of the dried salt, as it is too hygroscopic to be weighed otherwise than in a stoppered bottle. For additional comments see under *Lithii Benzoas*.

LITHII CITRAS.—A 5 percent. solution of a salt free from acid citrate is more than "faintly" alkaline to litmus. A temperature of 180° is preferable to 150° for making the salt anhydrous previous to the quantitative conversion into sulphate; at the lower temperature a constant weight cannot be reached in a reasonable length of time. For additional comments see under *Lithii Benzoas*.

LITHII SALICYLAS.—While this salt is officially required to be neutral or slightly alkaline to litmus, it is more than slightly alkaline to this indicator when free from acid salicylate. The salt of the market contains crystal-water corresponding approximately to the formula $\text{LiC}_7\text{H}_5\text{O}_3 \cdot \frac{1}{2}\text{H}_2\text{O}$, of which the Pharmacopoeia takes no account. It becomes anhydrous at 100° and should, therefore, be dried to a constant weight at that temperature before it is weighed for the quantitative determination as sulphate. For additional comments use under *Lithii Benzoas*.

MAGNESII CARBONAS.—The test for calcium should be made with enough ammonium oxalate to prevent precipitation of magnesium oxalate, in this case with about 5 cc. of the official test solution. Anhydrous magnesium oxide being very hygroscopic, the crucible containing the residue after ignition should be kept covered with a closely fitting lid, from the time it is taken from the desiccator until the weight has been taken. Failure to take this precaution leads to entirely incorrect results. For the same reason exactly 0.400 gm. of this residue should not be taken for titration, as directed, but the entire quantity used.

MAGNESII OXIDUM.—The official statement that this forms a gelatinous mass with 15 parts of water does not apply to the products of this market. The comments under *Magnesiæ Carbonas* apply also to the oxide.

MANGANI SULPHAS.—In the test for alkalies and magnesium a residue of about 0.2 percent. should be allowed. In the test for zinc, ferric compounds, present in permissible quantity, may cause precipitation of sulphur, which may be mistaken for zinc sulphide. The test is better made by adding hydrogen sulphide to the filtrate from the precipitate produced by an excess of ammonium carbonate in a water-solution of the salt previously treated with chlorine.

METHYLIS SALICYLAS.—The alkaline liquid (last paragraph) should be heated at 100° C. for at least 5 minutes, to saponify the ester, before it is diluted with water, otherwise most of the methyl salicylate will be precipitated unchanged by the hydrochloric acid.

METHYLTHIONINÆ HYDROCHLORIDUM.—The U. S. P. is in error in assigning an anhydrous formula to the crystalline compound; it contains 3 molecules (=14.46 percent.) of water, of which it loses two at 100°, the remainder at 150°. The ash requirement is too stringent, as few obtainable specimens come within its limits; a maximum of 1 percent. has been proposed and can be readily met. As any zinc compounds present are likely to be reduced, at least partially, to

metal during incineration, and as zinc is volatile at comparatively low temperatures, this impurity may escape detection unless special precautions are taken. It is recommended that the test be carried out somewhat as follows: 0.5 gm. of sample is carbonized at a temperature below a red heat, in a porcelain crucible. The residue is powdered and boiled for 5 minutes with 10 cc. of diluted hydrochloric acid. The mixture is then filtered and the filter washed with 10 cc. of water. The combined liquids are boiled with 1 cc. of nitric acid, then supersaturated with ammonia water and filtered if not clear. Ammonium sulphide should produce no turbidity in the filtrate. The official test for arsenic is defective in that the proportions of potassium nitrate and sodium carbonate are not specified and in that the nitric acid is not eliminated before treatment with sulphurous acid. There seems also to be no good reason why the test should be four times as stringent as it is for most other official substances. The following is recommended to replace the present test: A powdered mixture of 0.5 gm. of sample and 1 gm. each of potassium nitrate and dried sodium carbonate is heated in a crucible until the organic matter is completely oxidized. The cooled residue is dissolved in 10 cc. of diluted sulphuric acid and the solution evaporated over a flame until sulphuric acid begins to vaporize. The residue should not respond to the Modified Gutzeit's Test (U. S. P. VIII). Adulteration with dextrin has been noted by J. M. Francis and C. E. Vanderkleed. It may be detected by its insolubility in alcohol; the amount of insoluble residue, obtained by boiling about 1 gm. of methylene blue with 50 cc. of alcohol, washing on a filter with 50 cc. of hot alcohol, and drying at 100°, might be limited to 1 percent.

MORPHINA.—A definite melting point cannot be stipulated, as the alkaloid decomposes below the melting temperature and then melts at temperatures varying with the rate of heating and other conditions. Residues on incineration should not exceed 0.05 percent.

MORPHINAE ACETAS.—It has more than a "faint" odor of acetic acid, owing to gradual spontaneous decomposition. Residues on incineration should not exceed 0.05 percent. The precipitate produced by ammonia water is nearly white only in case of a freshly made salt; older products yield buff-colored to light brown precipitates. The same applies to the color of solutions of the salt in aqueous caustic alkali. Because of its instability this salt cannot be expected to meet the U. S. P. requirements as to color and solubility, except when freshly made. Rapid deterioration and the generally conceded fact that it serves no purpose that is not served better by one of the other official morphine salts, make it desirable that the use of the acetate be stopped. Among 12 of the most important foreign pharmacopœias only the British recognizes it. The Belgian, German, and Swiss pharmacopœias either direct or permit substitution of the hydrochloride when the acetate is ordered.

MORPHINAE HYDROCHLORIDUM.—The following tests should be added. A water-solution of the salt (1 in 50), should not be rendered turbid by diluted sulphuric acid (barium) nor, when acidulated with hydrochloric acid, by barium chloride (sulphates).

PARAFFINUM.—The requirement that "its alcoholic solution should not redden moistened blue litmus paper" conflicts somewhat with the statement in the pre-

ceding paragraph that paraffin is insoluble in alcohol. The test is preferably made by shaking melted paraffin with an equal volume of hot water and testing the latter with litmus.

PARALDEHYDUM.—The chief impurities in this are acetaldehyde and, according to R. Richter, metaldehyde. Excessive quantities of these are shown by abnormal freezing and boiling points. The official statements that paraldehyde solidifies "when cooled to near 0°C," and "becomes liquid again at 10.5° C," may occasion rejection of the best products of the market. The German Pharmacopoeia states that paraldehyde containing about 4 percent. of acetaldehyde congeals at 6° to 7°, but gives no melting point. The experience of this laboratory is that specimens which have approximately the official boiling point congeal at practically the same temperatures at which they melt, usually 8° or 9° C. The melting point 10.5° of the U. S. P. is a figure given by some authorities for the chemically pure substance and is not likely to be reached by medicinal products. The official figures should probably be changed to a requirement that the congealing point be not lower than 6°. The melting point is superfluous as a test of purity. The specific gravities of specimens of good quality tested of late ranged from 0.9910 to 0.9928 at 25°, all of them being higher than the official figures. It is recommended that the specific gravity be given as "about 0.992 at 25°," but not required as a test of purity.

PELLETIERINAE TANNAS.—The products of the market differ more or less from the preparation described in the U. S. P. They are usually incompletely soluble in water and in alcohol and the prescribed color tests are inadequate, as the reactions are obscured by the tannin or other organic matter. On extraction of the alkaloids by shaking with chloroform and caustic alkali solution, acidulating the chloroform extracts with hydrochloric acid, then evaporating and drying, residues of 17 to 20 percent. of alkaloid chlorides have been obtained. These residues responded readily to the selenous acid test and produced only light yellow colors with sulphuric or nitric acid.

PHENOL.—The required minimum contents of actual phenol might be raised to 98 percent., as that strength, rather than 96 percent., corresponds to the official congealing point limits of 39°. Determination of the congealing point is one of the most important of the tests; it makes a quantitative determination of phenol, as well as the glycerin test and a boiling point determination practically superfluous. The stated solubility in water is wrong; it should be about "12" instead of "19.6" parts.

PHENOL LIQUEFACTUM.—Products obtained by the official method contain at least 88 and may contain up to 90 percent. of actual phenol; some such range would be preferable to the present minimum of 86.4 percent. The official congealing point, 13.5°, corresponds to about 88 percent. of phenol. In connection with the boiling point, "188°" should be changed to "182°."

PHENYLIS SALICYLAS.—The melting point is an important test of purity, but the rigid figure 42° should give way to a range of about 41° to 43°, within which limits the melting interval should be required to fall.

PHOSPHORUS.—Specific gravity and melting point are not required either for identification or as criteria of purity and as these constants, as given in the U. S.

P., are those of entirely pure phosphorus, they are inapplicable to medicinal-commercial products and can be considered merely as informative statements, not as requirements. Phosphorus is not as soluble in chloroform as officially stated, but requires about 40 parts of the solvent.

PHYSOSTIGMINÆ SALICYLAS.—Determination of the melting point is too uncertain in its results, because of partial decomposition, to be of much value as a test of purity. The salt is officially described as having an acid reaction to litmus, but this is not always true of the market product, which is sometimes neutral. Because of its use in eye-drops, more than traces of acid are probably objectionable and it might be well if it were required to be neutral or not more than faintly acid to litmus paper when tested in a cold-saturated water-solution. For distinguishing this salt from the sulphate, the indirect test with platinum chloride is inconclusive and unreliable; it is sufficiently well identified as a salicylate by the ferric chloride test and presence of sulphate is more conclusively shown with barium chloride.

PHYSOSTIGMINÆ SULPHAS.—Remarks under the preceding apply also to this salt. The test for excessive acidity should be made in a 1-20 solution. The statement that this salt "yields only a faint yellow color" with sulphuric acid is correct only when the proportion of the former is exceedingly small, but as a test for easily carbonizable impurities a solution of 0.1 gm. in 2 cc. of the acid should not become darker than yellow within 5 minutes.

PILOCARPINÆ HYDROCHLORIDUM.—Different authorities give melting points ranging from 193° to 205°; variations of 195° to 198° have been noted in this laboratory. This uncertainty about the melting point lessens its value as a test for excessive contamination with other Pilocarpus alkaloids or decomposition products. Determination of optical rotation may prove more satisfactory; the French Pharmacopœia states that the specific rotatory power is $\alpha_D^{25} = +91^\circ$, when determined in a water-solution containing 2 gm. of the salt in 100 cc.

PILOCARPINÆ NITRAS.—To exclude excessive quantities of other Pilocarpus alkaloids, etc., the *British Pharmaceutical Codex* proposes that the melting point should not be lower than 172° C. The pure salt is generally considered to melt at 177° to 178°. Specific rotatory power according to the French Pharmacopœia, is $\alpha_D^{25} = 82.2^\circ$.

PLUMBI ACETAS.—Market products do not conform strictly to the official specifications, being sufficiently basic to cause them to contain less than the required minimum of 99.5 percent. of the crystallized normal salt. A. Seidell found the lead in a number of samples to correspond to 101.6 to 106.1 percent. of $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$. A strictly normal salt would not be acceptable to the drug trade because of its strong odor of acetic acid and its instability. However, this varying basicity should be kept within reasonable limits and it is therefore recommended that the salt should contain a quantity of lead corresponding to not less than 99.5 nor more than 105 percent. of $\text{Pb}(\text{C}_2\text{H}_3\text{O}_2)_2 \cdot 3\text{H}_2\text{O}$. Solutions (1 in 20) in water are usually more than "slightly" alkaline to litmus. The allowable limits of foreign metals, etc. should be more clearly defined than by terms like "slight precipitate" and "slight residue."

POTASSII ACETAS.—The salt must be dried for at least 2 hours at 150° to render it anhydrous before assaying. In determinations of the type involved in the assay of this salt, the washings of the charred mass should be tested for alkalinity with litmus or phenolphthalein, not with methyl-orange as directed. This error occurs also in connection with the assays of other official alkali salts of organic acids. It is also advisable to boil the mass with water for 15 minutes or longer to facilitate extraction, preferably in platinum, as all except the most resistant glass may increase the alkalinity of the liquid sufficiently to introduce a serious error. An alternative method, which has been found satisfactory in this laboratory, consists in boiling the charred mass with an excess of volumetric sulphuric acid, filtering, washing and titrating the excess of acid.

POTASSII BICARBONAS.—The stated percentage of loss in weight at red heat and the statement that concentrated solutions in water are neutral to phenolphthalein are not to be understood as specifications for the medicinal salt, but merely as characteristics of the chemically pure substance.

POTASSII BITARTRAS.—A minimum standard of 99 percent. is unnecessarily low, and might be raised to 99.5 percent., the commercial product being frequently 99.9 percent. pure. For the test for alum and phosphates the mixture with potassium carbonate and nitrate should not be heated in a porcelain crucible, as officially directed, but in platinum. An assay is made more conveniently than by the official method, and with less risk of error by direct titration of a water-solution of 0.8 to 0.9 gm. of the salt with N/10 alkali with phenolphthalein as indicator.

POTASSII BROMIDUM.—The product of representative manufacturers is now at least 98.5 percent. pure, the chief impurity being potassium chloride, and the standard could be raised to that figure. The indirect quantitative determination of the mixed bromide and chloride by titration with silver nitrate is liable to be rendered grossly inaccurate by potassium sulphate, which may be present in considerable quantity in a carelessly made salt and for which no test is now required; not more than slight traces of sulphate should be allowed. It would also be a simple matter for unscrupulous persons to add to a product containing an excessive amount of chloride enough potassium sulphate to bring the amount of silver nitrate required for precipitation within the specified limits. Such mixtures would stand the other official tests also.

POTASSII CARBONAS.—To remove water completely in a reasonable length of time, a temperature of 150° to 160° is required.

POTASSII CHLORAS.—The impurities in this salt, as found in the market, are usually present only in traces. Quantitative determinations are therefore superfluous, as a rule, and the present standard of 99 percent. can be raised to 99.5 percent.

POTASSII CITRAS.—See comments under *Potassii Acetas* concerning the assay.

POTASSII CYANIDUM.—Potassium cyanide of U. S. P. standard is practically unobtainable. Sodium cyanide and mixtures of sodium and potassium cyanides containing the amount of cyanogen required in the official salt, however, are available.

POTASSII HYPOPHOSPHIS.—A new method, by Rupp and Kroll, for the determination of hypophosphorous acid in calcium hypophosphite, recently published (*Archiv d. Pharm.*, v. 249, pp. 493-7), is likely to prove more reliable and convenient than any other known at this time for the assay of most of the official hypophosphites. It consists in oxidation with an excess of Koppeschaar's solution according to the equation: $\text{H}_3\text{PO}_2 + 4\text{Br} + 2\text{H}_2\text{O} \rightarrow \text{H}_3\text{PO}_4 + 4\text{HBr}$. The procedure is like that for the determination of phenol. The accuracy of the method has been verified by at least one investigator, who makes the only objection that phosphites, if present, raise the result. The amount of this impurity in a purified salt, however, is not likely to be sufficient to exert an appreciable influence on the results. No tests for phosphites in hypophosphites are given in the U. S. P. That of the German Pharmacopoeia for phosphite and phosphate, requiring that a water-solution (1+19) of calcium hypophosphite, acidulated with acetic acid, should not be rendered turbid at once by lead acetate, is applicable also to the alkali hypophosphites.

POTASSII IODIDUM.—The official method of titration of iodides is not satisfactory, as it requires considerable practice to obtain accurate results, because of uncertainty of the end point; more reliable results have been obtained with Volhard's method. A test for sulphates should be added, as these may be present in a carelessly made salt and cause the percentage of actual potassium iodide, as determined by titration with silver nitrate, to appear higher than it is, provided the salt also contains the usual amount of potassium chloride. For the titration, samples should be powdered and dried a few hours at 100° to 110° C. before weighing.

POTASSII NITRAS.—If a dried specimen of this salt, containing not more than 3 percent. of moisture, shows presence of less than 1 percent. of potassium chloride by titration with silver nitrate and of not more than traces of sodium by the flame test, and in addition stands the U. S. P. tests for impurities, it may safely be considered to comply with the minimum standard of 99 percent. If more than a trace of sodium be found, a determination of potassium would logically be required and in doubtful cases also a determination of nitric acid, to settle the question. A melting point of exactly 353° should not be regarded as a requirement. Authorities are by no means unanimous about the melting point of the chemically pure salt, much less about a salt containing up to 1 percent. of impurities.

POTASSII PERMANGANAS.—The directions fail to state, in connection with the assay, that the mixture should be warmed until clear and colorless before determination of the excess of oxalic acid.

PYROGALLOL.—It is recommended that in place of the present melting point a melting interval, with limits from 130° to 133°, be required and that presence of not more than 0.05 percent. of non-volatile matter be allowed. While it is possible to make solutions so weak that they will comply literally with the specification that "the freshly prepared aqueous solution is neutral to litmus paper and colorless," a common sense construction of the statement would require that a solution of the strength most generally used for U. S. P. tests of purity, namely 5 percent., be examined. Solutions of this strength, of the best obtainable pro-

ducts, in freshly boiled and cooled distilled water, are invariably slightly acid and yellowish, the depth of color, of course, varying with the bulk examined. The specifications should be changed accordingly.

PYROXYLINUM.—A limit of 0.2 to 0.3 percent. of mineral impurities should be allowed and it is important that a test for acids be added. A test to limit moisture has been suggested to be desirable.

QUININA.—The melting points of quinine and its compounds of medicinal purity must necessarily vary within rather wide limits, since varying amounts of cinchonidine, hydroquinine, etc., are always present. As these constants are not needed for establishing identity or purity, they should either be omitted or stated to apply to the chemically pure substances only. The thalleoquin reaction cannot be obtained by following the official directions, the amount of bromine being entirely too large; not more than 1 or 2 drops of the official test solution should be used. The details of this test have apparently been adjusted as a result of trials with bromine water that had lost the greater part of its bromine. Such deterioration is almost certain with bromine water made by the official directions. It is preferable, if it is to be kept for any length of time, to make the solution with an excess of bromine, so that the water will always be nearly saturated with bromine regardless of loss by evaporation or chemical change. Solubility of quinine in a mixture of absolute alcohol and ether is incapable of showing "absence" of cinchonine and cinchonidine, moreover, presence of a limited amount of other Cinchona alkaloids, chief of which is cinchonidine, is allowed by another test. The color of the solution obtained in the sulphuric acid test for readily carbonizable matter is affected by the relative and absolute quantities of quinine and of the acid taken; a solution of 0.1 gm. of quinine in 2 cc. of sulphuric acid should not be darker than light yellow. In the test for ammonium compounds the quantity of reagent is given but not that of the quinine; mere traces of ammonium salts are legitimate, unobjectionable impurities and if more than 0.2 gm. of quinine is taken for the test, it is unnecessarily severe. Quinine should not yield more than 0.1 percent. of ash. As regards the ammonia test for other Cinchona alkaloids, the inconsistency of disregarding the proportion of alkaloid in the several official quinine compounds has been pointed out by A. B. Prescott, A. B. Lyons, and others. To remedy this defect, it would seem best to leave the test unchanged in the form it is now given under *Quininac Sulphas*, but in every other case direct to take such an amount of the compound in question as will contain the same weight of alkaloid as does 1.8 gm. of quinine sulphate that has been dried at 50° and then contains 2 molecules of water. In case of quinine, 1.74 gm. of the trihydrate would be the amount required, instead of 2 gm., weighed after drying at 50° for 2 hours. The directions for indiscriminate drying at 50° of various quinine compounds for this test are without any good reason so far discovered; this procedure makes still more disproportionate the relative stringency of the test as applied to the several compounds. As the test is based on results with quinine sulphate having a neutral or only slightly alkaline reaction to litmus, the use of hematoxylin as indicator for the neutralization of quinine is questionable, since there is evidence that the neutral points obtained with this indicator and with litmus do not coincide. Litmus solution properly made from ma-

terial of good quality is sufficiently sensitive, if the alcohol-solution of quinine is diluted with about twice its volume of water, but neither litmus nor hematoxylin is sensitive enough in strongly alcoholic mixtures for accurate neutralization of most alkaloids. It is recommended to change the official test as follows: Dissolve 1.74 gm. of quinine in 20 cc. of alcohol, dilute the solution with 50 cc. of hot water and neutralize it with normal sulphuric acid, using litmus T. S. as indicator. Evaporate the liquid to dryness in a porcelain dish on a water-bath, powder the residue, and mix it in a test-tube with 20 cc. of water. Complete the test as directed under *Quininæ Sulphas*.

QUININÆ BISULPHAS.—In view of the fact, which has been recognized by the Italian Pharmacopœia, that the solubility of quinine sulphate in water is influenced by the presence of metallic salts, such as sodium sulphate, chloride, etc., it is advisable to avoid introduction of such salts in the application of the ammonia test for other Cinchona alkaloids to quinine compounds; it is preferable to separate the free alkaloids by a shaking-out process, then proceed as recommended above under *Quinina*. In place of 2 gm. of a salt that has been dried for 2 hours at 50°, 2.52 gm. of the crystallized salt should be taken for this test. For further comments see under *Quinina*.

QUININÆ HYDROBROMIDUM.—In the nitric acid test for morphine, an orange color is produced, due to liberation of bromine, but no deep red color, fading to orange, should be noticeable. As barium salts are used by manufacturers to remove sulphates from the salt, addition of a few drops of diluted sulphuric acid to 10 cc. of a hot water-solution (1 in 50) of the salt should cause no turbidity. In place of 3 gm. of a salt that has been dried for two hours at 50°, 2.93 gm. of the crystallized salt should be taken for the test for other Cinchona alkaloids, if 30 cc. of water are to be taken for the final maceration, or two-thirds of that quantity if 20 cc. of water are to be used. For further comments see under *Quinina* and *Quininæ Bisulphas*.

QUININÆ HYDROCHLORIDUM.—A test for barium should be added for reasons stated under *Quininæ Hydrobromidum*. In place of 3 gm. of a salt that has been dried for 2 hours at 50°, 2.75 gm. of the crystallized salt should be taken for the test for other Cinchona alkaloids, if 30 cc. of water are to be taken for the final maceration, or two-thirds of that quantity if 20 cc. of water are to be taken. For further comments see under *Quinina* and *Quininæ Bisulphas*.

QUININÆ SALICYLAS.—The figures of the U. S. P. for solubility in water and alcohol are incorrect; A. Seidell found the salt soluble in about 1500 parts water and in about 21 parts of alcohol. The formula of the salt as found in the market is not as given in the U. S. P. but is $C_{20}H_{24}O_2N_2 \cdot C_7H_6O_3 \cdot H_2O$, which corresponds to 3.78 percent. of crystal-water; the limit of loss at 100°, therefore, is placed more properly at about 4, rather than 2 percent. Tests for absence of more than traces of chlorides and sulphates might be added to advantage. In place of 2 gm., 2.21 gm. of the salt should be taken for the test for other Cinchona alkaloids, about 5 cc. of ammonia water should be used in the shaking-out process, and the alcohol-solution of alkaloids should be diluted with about 50 cc. of hot water, to render the indicator (litmus solution) more sensitive. For further comments see under *Quinina*.

QUININAE SULPHAS.—Solutions in water are usually slightly alkaline to litmus. It is advisable, in making the test for other cinchona alkaloids, to choose a water-bath of considerable size for the macerations, so that an even temperature can be maintained more readily. There is no reason for deviating 1 or 2 degrees from the specified temperatures and the portion of the official text allowing this is better omitted, as it is likely to lead to careless manipulation. For further comments see under *Quinina*.

(To be continued.)

INTERNATIONAL STANDARDS FOR COLORED FLUIDS.*

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Introduction: That the color of certain fluids is a distinct factor in pure chemistry is evident from the employment of such colorimetric tests as that of Wessler, and when we turn to applied chemistry, we find the color of liquid products of such esthetic influence to the consumer as to be of vital commercial value to the manufacturer. This is the philosophy of use of coloring agents in pharmacy and furthermore explains the call for uniformity in the tint of natural colored products. So it is that manufacturers of oils, beer and whiskey seek uniformity in color of their products by the use of colorimeters; that is why Professor Felix Ehrlich (*Zeitschrift Ver. Zuckerind* 59) (1909) (746) has advocated international standardization of caramel by use of the definite brown substance, *Saccharan*, which he prepared from sugar. Professor Ehrlich's effort to establish an international standard for caramel is the partial expression of a still broader need of international uniformity of colors, this need being fittingly expressed by Hans Moeller at the International Pharmaceutical Congress of 1910 (*Berichte der Deutschen Pharmazeutischen Gesellschaft*, 10, 1910, 358), as follows:

“Ein neues Gebiet, auf dem—meiner Meinung nach—jetzt internationale Regeln fest gesetzt werden solten is zweifelsohn das der exakten Farben bestimmungen.”

The subject was brought to the writer in his capacity as member of the Committee on Revision of the National Formulary, there being entrusted to a subcommittee of which he was a member, the problem of standardizing tincture of caramel (*Saccharum ustum*) and tincture of cudbear (*Persionis*) which is proposed to recognize in the forthcoming edition of that work. It is needless to repeat the numerous and practically fruitless efforts toward standardization already reported by the writer (*American Druggist* 59, 1912, 35) except to say that while some of the plans tried out were satisfactory, each possessed the in-

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superable objections of uncertainty of strength or instability of tint. So it was that such standards for cudbear as stained glass, alkaline phenolphthalein solution and solution of commercial orcein, and such for caramel as amber glass and carefully prepared burnt sugar solution were abandoned and after experimentation with tintometers, the following simple, accurate and inexpensive method was devised.

Suggested Basis of Standardization: From the Lovibond tintometer with its blendings of red, yellow and blue glass slides, it was a simple step to the mixing of standard and stable, red, yellow and blue solutions and the chemical solutions adopted, because of stability and comparative ease of standardization were slightly acidulated solutions of cobalt chloride, ferric chloride and cupric sulphate. Since starting the work, examination of the literature has shown that Hazen (American Chemical Journal 14, 1892, 300), prepared diluted water-testing solutions from potasso-platinic chloride and cobalt chloride and that Crookes, Odling and Tidy (Chemical News 34, 1881, 174), used for similar water-testing purposes a ferric chloride-cobalt chloride solution in conjunction with a cupric sulphate solution, the two solutions operated in two wedge-shaped flasks. But in both of these plans empiric solutions were employed and for the limited scope of matching colors of water samples, whereas the investigation here recorded, standardized volumetric solutions were used and the wide range of hues here exhibited are produced.

Operation: For the blending, half-normal volumetric solutions based on the atomic weights of 1912 were employed.

Standard Red contains 14.74 gm. cobalt to the liter.

Standard Yellow contains 9.308 gm. ferric iron to the liter.

Standard Blue contains 15.8925 gm. copper to the liter.

Three sets of these standard red, yellow and blue solutions have thus far been prepared. The first set was unacidulated and empirically prepared by dissolving the exact molecular proportion of C. P. crystalline chemicals, ferric alum, cobalt chloride and cupric sulphate in water to a half-normal solution; but as the iron solution either alone or in combination with the cobalt or copper solution precipitated after standing a few weeks, slight acidulation was necessary to secure permanent solutions and to aid uniformity, all the colored solutions were subsequently prepared with a fluid consisting of 25 cc. of 31% hydrochloric acid and 975 cc. of water; while for the iron solution, ferric chloride was substituted for ferric alum.

While the addition of the small amount of acid did not affect the tint of the cobalt or copper solution, it of course changed materially the color of the ferric solution, and hence the blends of the three solutions. In passing, it might be said that the blending of neutral solutions strongly pointed to the interesting fact that *equal volumes of equimolecular solutions of ferric iron, copper and cobalt, give a practically colorless fluid corresponding closely with the "neutral tint" of Lovibond.* (Measurement of Light and Color Sensations, p. 32.)

As will be noted below when acid is added to the three solutions, the color preponderance is so affected that the neutral gray tint is found in a blending of red 5, yellow 2, and blue 5, the mixture of equal parts of the three solutions being distinctly yellow. The other two sets of red, yellow and blue solutions were made strictly half-normal as per specifications given below.

Red: 59.4965 gm. $\text{CoCl}_2 \cdot 6\text{H}_2\text{O}$ diluted to 1000 cc. with a mixture of 25 cc. 31% HCl and 975 cc. water.

Yellow: 45.054 gm. $\text{FeCl}_3 \cdot 6\text{H}_2\text{O}$ diluted to 1000 cc. with a mixture of 25 cc. 31% HCl and 975 cc. water.

Blue: 62.43 gm. $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ diluted to 1000 cc. with a mixture of 25 cc. 31% HCl and 975 cc. water.

Of course, the original solutions were prepared from larger amounts of the three salts and were then diluted to the above specified half-normal strength with acidulated water; new assays being made after each dilution until exact strength was attained. The iron solution was standardized volumetrically by the potassium iodide-thio-sulphate method, while the copper and cobalt solutions were assayed gravimetrically. Analytical data as to these assays will be published later in a more extended report on this line of investigation.

One of these sets of assayed solutions was prepared from Kaulbaum's C. P. "Analyse" copper sulphate; Kaulbaum's C. P. "Nickel-frei" cobalt chloride and Merck's "Reagent" ferric chloride; while the other set, equally carefully assayed, was prepared from the usual C. P. chemicals as found in stock, the idea being to see if trifling deviations from absolute purity would seriously affect the tint of the mixed solutions. Comparison of products of combinations of these two sets of red, yellow and green fluids and that as "unknowns" showed no deviation save in one isolated case out of the 88 hues tried and this, very likely, was due to some error in mixing.

The Mixing: The production of the 88 hues mentioned above from the standard red, yellow and blue solutions was the result of mixing all possible combinations of the three fluids that would lead to a finished volume of 12 cc. when each fluid was used only in cubic centimeter amounts; that is, when fractional parts of the cubic centimeter were not selected. As a full list of these 88 blendings is given below, we need here only mention that the 88 series of combinations of these fluids to make 12 cc. was empirically chosen as a convenient number and that it goes without saying that an indefinite number of hues are possible, if larger volumes are prepared or fractional parts of the cubic centimeter are used as basis of mixing. It might also be added that in the 88 hues, the combinations of any two of the three colors are included. The result of these 88 blends are exhibited with this and show a range of hues covering the entire spectrum from the red of cobalt chloride solution to the blue of copper sulphate solution. This, of course, eliminates the cardinal reds and crimsons and the azures and navy blues. A number of the hues, it will be noted, are of a neutral tint, due undoubtedly to the absorption of the light ray by the chemicals, under certain con-

ditions of blending. These "neutrals" will be the subject of further study on physical lines.

For convenience sake, the 88 hues have been classified by eye into the following tentative groupings:

THE R. Y. B. HUES.

(In this tabulation "R" means $\frac{1}{2}$ N—CoCl₆H₂O; "Y" means $\frac{1}{2}$ N—FeCl₆H₂O, and "B" means $\frac{1}{2}$ N—CuSO₄5H₂O; while in the order from top to bottom of the columns the sequence of the solar spectrum is followed. The interrogation point after some of the blendings means a hue which does not fit satisfactorily into the sequence and which, however, is not "gray" enough to place among the neutral tints.)

Red Orange Group.			Yellow Group.			Green Group.			Blue Green Group.			Neutral Group.		
R.	Y.	B.	R.	Y.	B.	R.	Y.	B.	R.	Y.	B.	R.	Y.	B.
11	1	0	5	5	2	1	8	3	0	4	8	(Reddish)		
10	2	0	4	7	1	0	10	2	1	2	9	10	1	1
9	3	0	3	9	0	2	5	5 ?	3	2	7 ?	9	1	2
9	2	1	4	8	0	1	7	4	3	1	8	8	2	2
8	4	0	3	8	1	0	9	3	2	1	9	7	2	3
8	3	1	2	10	0	0	8	4	2	2	8 ?	8	1	3
7	5	0	1	11	0	1	6	5	1	1	10	7	1	4
7	4	1	Green Yellow Group.			0	7	5	0	1	11	6	1	5
6	6	0	3	7	2	1	5	6	Blue Violet Group.			(Yellowish)		
6	5	1	2	9	1	2	4	6	1	0	11	6	2	4
6	4	2	1	10	1	0	6	6	2	0	10	5	3	3
7	3	2	3	6	3	1	4	7	3	0	9	5	4	3
5	7	0	2	8	2	1	3	8	4	0	8	4	6	2
5	6	1	Yellow Green Group.			0	5	7	5	0	7	5	3	4
			2	7	3	0	3	9	6	0	6	4	5	3
			1	9	2	0	2	10	7	0	5	(Greenish)		
			0	11	1				8	0	4	4	4	4
			2	6	4				9	0	3	1	3	5
			3	5	4 ?				10	0	2	4	2	6
			3	4	5				11	0	1	(Grayish)		
			3	3	6							5	2	5
												5	1	6
												(Bluish)		
												4	1	7

Using the Hues: It will be seen from the foregoing table that the 88 combinations afford an excellent range of tints covering most of those required in pharmacy and commerce. The investigation has not, as yet, sufficiently progressed to report an extended line of color values and in this paper mention will only be made of the matching of the two colors entrusted to the writer by the National Formulary Committee.

Before discussing the individual matchings, it might be well to say that the writer has found that a very satisfactory way to match colored fluids is by use of those oblong flint glass prescription bottles known in American commerce as "Tall Blakes," but Nessler tubes give excellent results and for very accurate work the Rowntree Garachty colorimeter is best. Details of this phase of the matter are found in a paper in the (*Practical Druggist*, 30, 1912, 24).

As to caramel, a typical solution made by carefully caramelizing 1 gm. cane sugar and diluting to 500 cc. was found by two observers to match exactly the half-normal standard solution "R. Y. B. 4-7-1." As to cudbear, a purified extract (made by percolation of the drug with acetone after previous extraction with chloroform) was dissolved in alcohol containing a trace of ammonia and then diluted with water. The purple tint of this dilution did not match any of the "R. Y. B." samples but when the dilution was faintly acidulated with citric acid, similar tints were obtained; although the acidulated cudbear dilution was a trifle more transparent. Since there was some variation, the cudbear dilution and the "R. Y. B." hues were submitted to five observers as "unknowns" and the reports of these observers are tabulated below in sequence from darkest to

lightest. The "R. Y. B." fluids were the assayed half-normal blends, "a" and "b" being the two different samples described above. Two cudbear dilutions 1-50,000 were employed; one being distinctly acid (a), and the other just past the neutral point (b), the intention being to see if difference in degree of acidity would make a difference in tint.

MATCHING CUDBEAR DILUTIONS WITH "R. Y. B." HUES.

I and II

a. "R. Y. B. 9-0-3"
 a. "R. Y. B. 10-0-2"
 b. "R. Y. B. 10-0-2"
 Cudbear dilution 1-50,000 "b"
 " " 1-50,000 "a"
 " " 1-60,000
 " " 1-75,000

IV

a. "R. Y. B. 9-0-3"
 Cudbear 1-50,000 "b"
 b. "R. Y. B. 10-0-2"
 Cudbear 1-50,000 "a"
 a. "R. Y. B. 10-0-2"
 Cudbear 1-60,000
 " 1-75,000

III

a. "R. Y. B. 9-0-3"
 b. "R. Y. B. 10-0-2"
 a. "R. Y. B. 10-0-2"
 Cudbear dilution 1-50,000 "b"
 " " 1-50,000 "a"
 " " 1,60,000
 " " 1-75,000

X

a. "R. Y. B. 9-0-3"
 Cudbear 1-50,000 "a"
 b. "R. Y. B. 10-0-2"
 a. "R. Y. B. 10-0-2"
 Cudbear 1-50,000 "b"
 " 1-60,000
 " 1-75,000

From these five reports, one is justified in reporting that the dilution of 1 to 50,000 of that particular extract of cudbear matched the hue produced by blending 10 volumes of half-normal cobalt solution and 2 volumes half-normal copper solution.

General Remarks: From the foregoing paragraphs it will be seen that the writer has adopted a nomenclature for the hues covered by the cobalt-ferric iron-copper blends; "R. Y. B. 10-1-1" meaning that proportion of the three half-normal colored fluids. This nomenclature is purely tentative and as further experimentation may show the advisability of using other ionic colors, it might be well, in the beginning to call the above cited combination "Co-Fe-Cu 10-1-1."

Soon after beginning the work, platonic chloride was tried out as the yellow fluid and there was prepared a carefully standardized solution which when based on the quadrivalent platinum cation was exactly fifth-normal (9.76 gm. pt. to liter). Blending this with fifth-normal solutions of cobalt chloride and of cupric sulphate showed that the platonic chloride had much more color than did the cobalt and copper solutions; two blends of 1 volume of platinum and 11 volumes of copper solution giving the normal green that is shown in the iron-copper blend, 1-5-6.

The pink manganese solutions (chloride and sulphate) were considered, but the prepared half-normal solutions were too light to be of service.

In conclusion, the writer wishes to admit that his plan is still in the experimental stage and in its present state has its limitations. While the demonstrated samples show a fine range of orange and green tints, it is weak in reds and blues. But in his opinion, the plan is the only one by which after more extended work, the color standard problem will be eventually solved, possibly by construction of a red-yellow-blue series of anions.

CODEINE IN COMMERCIAL MORPHINE SULPHATE.*

J. B. WILLIAMS, B. SC.

During the course of an examination of some tablets of morphine and atropine sulphates, about eight months ago, the amount of alkaloid other than morphine found greatly exceeded the amount of atropine supposed to be present. This naturally led to the conclusion that either some of the morphine extracted with the atropine, or else some other alkaloid was present. The latter proved to be the case, as is shown by the extraction of tablets of morphine sulphate containing no atropine, codeine being the other alkaloid found.

This led to the examination of a number of tablets and samples of morphine sulphate made by leading pharmaceutical houses and manufacturers, and in every case codeine was found to be present in considerable quantities.

Samples were obtained from five large manufacturers of morphine sulphate, and tested for codeine with the following results:

Sample.	Percentage Codeine Sulphate found.
No. 1.....	1.9 per cent.
No. 2.....	.9 per cent.
No. 3.....	3.6 per cent.
No. 4.....	2.2 per cent.
No. 5.....	7.0 per cent.

Samples of morphine sulphate tablets made by leading pharmaceutical manufacturers were also obtained and tested for codeine:

Sample.	Percentage Codeine Sulphate found.
No. 1. 1/4 gr.....	2.5 per cent.
No. 2. 1/8 gr.....	6.5 per cent.
No. 3. 1/4 gr.....	3.1 per cent.
No. 4. 1/4 gr.....	2.5 per cent.
No. 5. 1/4 gr.....	2.9 per cent.

The method used for determining the codeine was as follows: Dissolve 0.5-1.0 gram of morphine sulphate, or an equivalent number of tablets in a small amount of water (15-20 cc.) and add a solution of sodium or potassium hydrate until the precipitate first formed is redissolved (3-4 cc. 5 per cent NaOH). Shake out with three or four 20 cc. portions of chloroform. Wash the combined chloroform extractions in another separator with 10 cc. water made slightly alkaline with sodium or potassium hydrates. Draw off the chloroform, filtering through cotton well wet with chloroform, into a beaker or flask, and wash the separator with two 10 cc. portions of chloroform, passing the washings through the filter into the flask. Evaporate the chloroform, dissolve the residue in excess of N/10

acid, and titrate back with N. 50 alkali, using cochineal as indicator. Each cc. of N. 10 acid neutralized by the alkaloid corresponds to 0.0315 gram (0.031483 gram) of codeine alkaloid or 0.039 gram of codeine sulphate U. S. P.

That all of the codeine and practically none of the morphine is extracted by this method was proved in several cases by repeating the extraction of the aqueous residue containing the morphine. The N. 50 alkali required in the titration being in every case within 0.1 cc. of the amount required to neutralize the N. 10 acid used.

The presence of 0.9 percent. to 7 percent. of codeine in the morphine sulphate being consumed in the United States at the present time is certainly very surprising. This condition of affairs is to be directly attributed to the lack of any test in the United States Pharmacopœia which will show the presence of several percent. of codeine in morphine sulphate. It is a condition of affairs arising from the lack of any test which would show the purity of the product, and not from any desire to market a sophisticated product, this being evident because codeine is a more valuable product, commercially, than morphine, and is readily separated from the latter. Manufacturers would certainly not allow the codeine to remain in their morphine sulphate at a loss to themselves, and at the expense of an inferior product.

In the manufacture of morphine sulphate the morphine is usually precipitated as the alkaloid from a large volume of water, enough to hold in solution several times the amount of codeine present. Some experiments showed that it was not possible to completely separate codeine from morphine in this way, and that part of the codeine is apparently carried down with the crystals of morphine, perhaps being isomorphous with the latter.

In order to avoid the presence of codeine in morphine sulphate in the future, the next edition of the United States Pharmacopœia should include a quantitative test for codeine in morphine. The test outlined above or some suitable modification of this test is suggested. A limit of 1 percent. or 1.5 percent. should also be established as the maximum amount of codeine allowable in morphine sulphate.

ANALYTICAL DEPARTMENT, PARKE, DAVIS & Co., Detroit, Mich., July 17, 1912.

DRUG DETERIORATION.

For years, those interested financially, in cold-storage warehouses and cold-storage products, have been trying to convince the public that, if the keeping of meat, fish, eggs and so forth in cold-storage did not actually improve the quality, it at least had no deleterious effects on the products. Recognizing that products could not be improved by cold-storage but that there was considerable danger of deterioration and believing that the public has a right to know the truth, state legislatures are enacting laws which require that for cold-storage products the duration of such storage be declared on each parcel.

Similarly, while pharmaceutical manufacturers, in general, are attempting to convince us of the permanence of their pharmaceutical products, it is being recognized more and more that there are a considerable number of drug products which are liable to suffer more or less seriously with age. In commenting on ex-

periments which have been made by Pittenger and Vanderkleed to preserve fluid-extract of ergot by sealing it in glass ampules, the *Journal A. M. A.* (Sept. 21, 1912, p. 959), says:

"The investigation of Hale on *Digitalis*, of Edmunds and Hale on ergot, and Dohme on calabar bean, coca and aconite, have revealed the fact that many drug preparations deteriorate, and that drugs are often several years old when they reach the patient. These facts have been emphasized, also, through a report of the Council on Pharmacy and Chemistry dealing with the testing of epinephrin solutions in which the Council recommends that 'manufacturers stamp the age of manufacture on the container, to guard against samples which are obviously overaged.' Naturally some manufacturers have asserted that the reported deterioration is accidental, or have tried to put the blame on the pharmacist. Some have shifted their previous claims as to strength in such a way as to avoid responsibility. Some firms, however, instead of attempting to dodge responsibility, are doing what ought to be done, and indicate the date of manufacture on the label of those preparations which are prone to deterioration."

Although many medical preparations no doubt are relatively permanent, it is not unfair, in view of the lack of definite information on the subject, to ask that the date of manufacture be placed on all labels of medicines. As manufacturers quite generally put on each package of a given preparation a number which identifies the "lot" from which the particular product is taken, such a system of dating would impose no extra expense to the manufacturer. It would merely supply information to which the physician, the pharmacist and the public all are entitled.—*Texas State Jour. of Medicine*. (Oct. 1912, p. 159).

DETERIORATION OF SPIRIT OF NITROUS ETHER.

F. L. SHANNON, STATE ANALYST, LANSING, MICHIGAN, DAIRY AND FOOD DEPARTMENT.

Spirit of Nitrous Ether, commonly called Spirit of Nitre, is defined by the Eighth Revision of the United States Pharmacopoeia as "An alcoholic solution of Ethyl Nitrite yielding, when freshly prepared and tested (by the method given in the U. S. P.), not less than 4% of the Ethyl Nitrite."

That this 4% of ethyl nitrite is easily lost under improper conditions is a matter of common knowledge among those who have anything to do with this preparation. Reports of various state departments charged with the enforcement of the drug laws show that this preparation has caused more or less trouble. It appears that the fault lies mainly in the manner in which it is stored. In the state of Michigan the records of the laboratory show that during the year of 1912 over 72% of the samples examined were found to fall below the required standard of the U. S. P. When some of the manufacturers of these preparations were asked to explain why their spirit of Nitrous Ether did not conform to the U. S. P. their reply was that it is impossible to keep such a volatile preparation for any length of time and have it of standard strength. However, investigation into

the manner in which such pharmacists stored their preparations generally disclosed the fact that they were not keeping it in strict accordance with the U. S. P. directions, only making a half-hearted attempt, if making any at all, to store it as their Pharmacopeia told them to.

In order that we might enlighten these people, this laboratory started an experiment some time ago, to determine the keeping qualities of spirit of nitrous ether. The plan of the experiment was to duplicate, as nearly as possible, conditions as may be found in any medium class drug store, by selecting bottles of various sizes and colors, by storing in a semi-dark place and at a temperature that could not be called cool. Thus it will be seen that the directions of the U. S. P. were not followed to the letter but were only attempted and carried out in an incomplete manner.

The experiment was conducted as follows: On March 5, 1911, a quantity of spirit of nitrous ether was made up and placed in seven bottles. The bottles used were ordinary half-pound and one-pound bottles, two of which were of amber glass, one green glass, and four flint glass bottles, such as may be found in any drug store. Each bottle when filled was securely fitted with an ordinary cork stopper. The bottle was then thoroughly shaken and an assay made of its contents.

The bottles were again securely stoppered and placed in a semi-dark place in a room adjoining the working laboratory, the temperature of which is about the same as that in the laboratory, viz., 65° to 75° F. At the end of three months the bottles were removed and the contents assayed. This procedure was continued for a period of fifteen months, assaying the contents of the bottles at intervals of three months each, except the time between the fourth and fifth assays, when a period of four months elapsed, and the results tabulated in the following table:

TABLE I.

Sample No.	Size of Bottle	Kind of Bottle	1st Assay Mar. 5, 1911, Time of Filling	2nd Assay June 5, 1911	3rd Assay Sept. 5, 1911	4th Assay Nov. 5, 1911	5th Assay Mar. 5, 1912	6th Assay June 5, 1912
1	12 oz.	Amber	3.98	3.95	3.83	3.73	3.70	3.56
2	12 oz.	Amber	3.99	3.86	3.73	3.61	3.53	3.45
3	16 oz.	Green	3.95	3.88	3.81	3.71	3.66	3.60
4	8 oz.	Flint	3.97	3.68	3.52	2.14	2.14	1.88
5	8 oz.	Flint	3.94	3.77	3.42	3.41	1.25	...
6	16 oz.	Flint	3.95	3.72	3.42	3.42	3.20	2.94
7	8 oz.	Flint	3.92	3.39	3.39	3.10	3.10	2.89

TABLE II.

Loss at the end of.....	2 mo. 7 Samples	6 mo. 7 Samples	9 mo. 7 Samples	12 mo. 7 Samples	15 mo. 6 Samples
Maximum	0.53	0.53	1.83	2.69	2.09
Minimum	0.03	0.14	0.25	0.28	0.35
Average	0.207	0.37	0.65	1.01	0.90

TABLE III.

Loss of Samples Stored in Colored Bottles at the end of.....	3 mo.	6 mo.	9 mo.	12 mo.	15 mo.
Maximum	0.13	0.26	0.38	0.46	0.54
Minimum	0.03	0.14	0.25	0.28	0.35
Average	0.07	0.18	0.29	0.34	0.44

A study of the table will show that for the first six months the samples retained their strength very well, the maximum loss under these conditions being only 0.53% with an average for the whole of only 0.37%. The greatest loss during the entire time seems to be in the samples stored in the flint glass bottles, although with the exception of Sample No. 4, the remainder kept fairly well for the first nine months. During the latter part of the experiment, however, the samples in the flint glass bottles decreased considerably, while those in the amber and green-colored bottles decreased in strength only a small amount in the whole fifteen months and the decrease was quite regular, the maximum being but 0.54% with an average of 0.44%. It would therefore appear that spirit of nitrous ether, when manufactured properly so that it will contain 4% Ethyl Nitrite when freshly prepared and stored in small dark-colored bottles in a cool place will remain standard strength for a long period of time. The pharmacist should make up this preparation in such quantity that the whole can be disposed of in a period of six months. He then should have no fear that he is not dispensing a U. S. P. article all the time.

I am indebted to Mr. A. R. Todd of this Laboratory for assistance in this experiment.

LABORATORIES OF THE MICHIGAN DAIRY AND FOOD DEPT., 1912.

COMPOUND SYRUP OF HYPOPHOSPHITES.

SAMUEL T. HENSEL, PH. G., DENVER, COLO.

Our judgments are frequently governed by theory regardless of what experiment will teach, and we are in consequence frequently led into error, or are apt to be guided more by it, than in testing the matter under consideration by actual experiment.

I am led to the above reflection by a conversation which I had the pleasure of having with a member of the association, who is also an officer in the newly created section on "Pharmacopœias and Formularies," during the meeting of the American Pharmaceutical Association at Denver, August 19 to 24, 1912.

The subject of our conversation was the Compound Syrup of Hypophosphites, and I had asked the question, Why it was that the sucrose content of that syrup was not up to the point of complete saturation?

The reply which I received was to the effect that if the sucrose content was increased, there would be a tendency to the "salting out" of the chemical salts entering into the composition of that syrup, and that theoretically, it was not expedient to go beyond what had been adopted by the Committee of Revision of the United States Pharmacopœia VIII.

I am nevertheless constrained to call attention to the fact that in physico-chemical processes, it is possible to make a saturated solution of a salt, and still be able to add other concentrated solutions without danger of the precipitation of the saline content of either solution.

This is in complete harmony with my experience in the manufacture of the

syrup, and I would add that for many years I have been impressed with the importance of the complete saturation of all syrups and have adopted the method of cold percolation, as the most effective, and by far the most desirable from every point of view.

More recently, within the past two or three years, I determined to apply the process to the compound syrup of hypophosphites. This was done with the most surprising and gratifying results, and with but few exceptions, I have continued to make it in this manner upon all occasions.

My method of procedure is as follows:

First: The solution of the iron and manganese hypophosphites and the sodium citrate, is effected in a scrupulously clean porcelain capsule with the careful application of heat, filtered, and allowed to cool as directed in the U. S. P. VIII.

Second: The solution of calcium, potassium and sodium hypophosphites is made in the manner directed by the U. S. P. VIII.

Third: The alkaloids quinine and strychnine are dissolved in the diluted hypophosphorous acid as directed by the U. S. P. VIII.

The above three solutions are then mixed, and this mixture is used as a menstruum for the percolation of the sugar. In regard to the latter, we have found Confectioner's Crystal A sugar the best both with respect to purity and texture.

The sugar is simply placed in a cylindrical percolator in the proportion of two parts by weight of sugar to one part by weight of solution, after having previously placed absorbent cotton moistened with distilled water in the neck of the percolator.

The physical advantage of this method is that the mean temperature of the locality where the syrup is made will serve as a control, the menstruum at the normal temperature of the place taking up no more and no less sugar than its coefficient of solubility for that temperature, and since under these conditions, it cannot become a supersaturated solution, will remain an elegant, stable and unalterable product.

Obviously, syrup made in the southern states, will contain a trifle more sugar than syrup made in states in the north. In both cases, however, the product will contain no more sugar than is necessary for its complete preservation and stability.

A recent experience with this syrup convinces me that heat, except in the preparation of the initial solution, should be rigidly avoided. This statement is supported both by observation and experiment as the following will indicate.

A short time ago I had occasion to make 4000 cc. of this syrup, and as the exigencies of the case required an immediate production, I departed from my usual custom of percolation, and prepared the syrup in accordance with the U. S. P. VIII, by agitation. At the expiration of a few hours there remained about 200 grams of undissolved sugar, and in order to hasten its solution, the container was carefully placed under the hot water faucet and the whole mass of syrup raised to temperature of not more than 130° F.

In a short period thereafter, about two weeks, I noticed a change in the syrup, it becoming cloudy upon being poured into the shop bottle. This cloudiness dis-

appeared after standing an hour or so and I became convinced that it was due to a partial fermentation, the cloudiness being directly caused by the agitation produced by the act of pouring, thus expanding the occluded CO_2 , producing a mass of minute bubbles.

During the gradual heating and subsequent slow cooling, there was a partial inversion of the sugar, this molecular change producing a form of sugar which immediately became subject to the bacterial influences which were at the same time rendered active by the increase in temperature, and the fermentation was proportionate to the sugar so inverted.

This hypothesis is seemingly supported by the following well-known fact.

If a given volume of a saturated solution of sucrose is placed in a test tube, and Fehling's test be applied, there will be no reaction.

If, however, the same volume of solution be heated to the boiling point and the copper and alkaline tartrate solutions of Fehling's test be alternately added, there will be an immediate characteristic reduction of the copper, showing that a molecular change has been effected in the solution by the application of heat.

This change is not only indicated by the above chemical test, but is also revealed by physical examination, which show that its optical activity has changed.

THE CRITICS OF THE PROPAGANDA.

In a recent issue of a well-known drug journal* is published a very instructive and helpful article by a professor in one of Chicago's medical colleges, entitled, "How Some Doctors View U. S. P. and N. F. Propaganda," with particular reference to the objections of some doctors to this movement.

While practically all of the statements made are true in a large measure, it is also true that all of them must be largely discounted in the light of the present status of the sister professions of medicine and pharmacy; this for the simple reason that insofar as medicine is not an exact science there will always be honest differences of opinion as to how the propaganda movement should be carried on, and for the further reason that any theory that will not work out practically is of absolutely no value whatever.

To begin with, the article opens up an old wound that had begun to show unmistakable signs of healing, as follows:

"Some doctors object to the therapeutic information that is gratuitously administered to them by the druggists. What, they say, do druggists know about therapeutics? And, I must confess, that some of the therapeutic ideas advanced by pharmacists in this connection, though taken from text-books, are antiquated and not in keeping with advanced conceptions. Would it not be better if pharmacists confined themselves in their literature intended for doctors to the discussion of things that druggists really know better than doctors, e. g., pleasant administration?"

This surely comes with poor grace when it is remembered that very few doctors out of the 150,000 in the United States objected to the "gratuitous information

*Journ. A. Ph. A., November, 1912, p. 1190.

administered" by the detail man and the pharmaceutical manufacturing houses, and because they did not object, we have today the lamentable fact to consider that the medical profession is prescribing hundreds of nostrums and specialties. But this is an old story.

Well may we ask: "Do these detail men and these houses know anything about therapeutics?" The deplorable condition of our materia medica as represented by the prescriptions of the average nostrum-prescribing physician would indicate that materia medica is a hodge-podge of nothingness; this is further illustrated by the chronically sick and diseased condition of thousands and thousands of our people who are being treated by nostrums and specialties.

This propaganda movement is not going to please everybody, and least of all will it please all the physicians. As the article under discussion truly says: "The better educated the doctor, the less will he be in need of U. S. P. and N. F. propaganda." This statement is the best testimonial the propaganda movement has ever had, for it says, in a nut-shell, that when the doctor is educated to know and to use U. S. P. and N. F. drugs and preparations, his materia medica education is complete.

But this propaganda movement is not intended to be of value to every doctor, as far as the pharmacists' part, as represented by the N. A. R. D., is concerned. The professors in the medical schools are privileged to teach their young charges the proper things in materia medica; a privilege that has been sadly and criminally neglected in the past.

It is not intended for the ethical and conscientious physician who already knows that prescribing official drugs and strictly open-formula prescriptions is the only way to get results and is the only way in which the public is interested, financially.

This propaganda movement is intended to reach, and does reach, that great class of physicians who are looking for help that no medical journal will give them and who cannot afford to take a post-graduate course in a medical college to learn their materia medica "all over again"; and these physicians do not object to "the therapeutic information that is gratuitously administered to them by the druggists" (that is, by the N. A. R. D.).

It is true that druggists have a commercial or financial interest in this movement, but let not critics forget that the most enlightened self-interest of these same druggists is the best kind of ethics and is what will finally win for this movement, and make medicine and pharmacy what they should be, professions. We only wish there was more of such "commercial" interest manifested, for this same "commercial" interest has, in the past four years, dealt the death blow to hundreds of nostrums, and has already seriously crippled the existence of many thousand other useless preparations.

Physicians, and ethical physicians especially, little realize how the medical profession, as a profession, has tied the druggists' hands. The competition that this profession is offering the pharmacists through free medical dispensaries and dispensing physicians is most lamentable and cannot be considered otherwise than a clear case of theft, and as long as this thing is permitted, medical ethics and pharmaceutical ethics are little more than monumental jokes.

If these things had been well considered, the following portion of the article in question would probably have been worded differently:

"Quite a number of doctors feel that the druggist is in this movement merely for the sake of dollars and cents, that the same commercialism lies behind it that leads him to 'counter-prescribing,' to indiscriminate refilling of prescriptions, and to substitution. To antagonize this objection, propaganda for ethical pharmacy should accompany the U. S. P. and N. F. propaganda. By the way, what is ethical pharmacy? Does anyone know of a code of pharmaceutical ethics? And if not, is it not time that such a code be devised?"

It is time (and the necessity for it has long existed) that pharmacists have a code of ethics, surely but of what value is such a code if the physician legally robs the pharmacist of two-thirds of his business?

Notes has certainly paved the way for an ethical pharmaceutical profession, and he who runs may read. But as the physician will not relinquish, voluntarily, that to which he has no moral right, namely, compounding and dispensing, it behooves the pharmacist to get what is his by right, through legislation, in order that his profession and art may be conserved and protected. This legislation is in a formative stage now and we shall watch and see if the physician will help the pharmacist, or hinder him.

For the guidance of any future criticism of the propaganda movement, it would seem, therefore, that critics study the situation carefully and direct their remarks where they will fall on productive soil.

Well directed criticism makes for intelligent progress and the N. A. R. D. propaganda movement certainly desires to make intelligent progress. But until it can be shown that the "therapeutic information administered" is no longer needed and is no longer welcomed by those physicians for whom it is intended, we will continue to administer our monthly doses of Monthly Therapeutic Topics and pay the postage, besides.—N. A. R. D. NOTES.

TIME TO STRIKE BACK.*

LINWOOD A. BROWN, PH. C., PH. D., LEXINGTON, KY.

Recently, I have been paying special attention to some of the slanderous and libelous statements about druggists published in the newspapers, in the form of patent medicine advertisements, and have come to the conclusion, that if the druggists of Kentucky have any gumption about them, it is time for them to strike back.

Almost every town in this state, large enough to have a newspaper and a drug store, can furnish an example of some of the lying statements commonly found in patent medicine advertisements.

A great many druggists for the sake of a little cheap advertising will allow any patent medicine "faker" to print their foul, and sometimes vulgar, indecent stuff above their names, for the mere sop of being called "special agent," etc.

*Paper presented to the Kentucky Pharmaceutical Association.

Such advertisements are usually cunningly worded so as to lead the unthinking public to believe that Blank, their druggist, knows the composition of the stuff, or is recommending it, or will guarantee it with his own money.

There is hardly any line that the druggist handles that keeps as much of his capital tied up, and which yields him as small a profit as patent medicines.

I have seen druggists allow themselves to be hypnotized into buying a gross or half-gross of some new patent, that is being widely exploited in his town or neighborhood, by the bait of a dozen bottles free and a lot of gaudy pictures and cards, that will make his store look like a side show in a cheap circus.

That same druggist will take this "stuff" and fill his show window with it, and try to get his friends and customers to buy it, and what is the result?—An ad appears in the next morning's paper, which says among other false and misleading statements, "No cheap substitute urged by a tricky, (or dishonest, or unscrupulous,) dealer, though it may be better for him to sell, can be 'just as good' for you to buy."

The people read this, and knowing that the manufacturer of this preparation is in the drug business, think he knows what he is talking about, and their estimation of your honesty and integrity goes down several notches.

Now, it seems to me, that this kind of thing has gone on long enough, and that it is about time for you to put on your fighting clothes and put a stop to such things.

If you don't deny such statements, no one else is going to do it for you, and if you don't deny them, you stand branded as "substitutors," "tricky dealers," "dishonest druggists," and a few other choice epithets that your friend, the patent medicine man, can think up.

A druggist usually stands pretty high in the public confidence, and he should be extremely jealous of anything that will tend to besmirch his good name or character as an honest, conscientious man.

Patent medicines have been shown up in such a large number of instances to be "fakes," and to be false and misleading in their claims, that the public is losing confidence in medicine, but the druggist should not stand for anything that tends to weaken the confidence of the people in him.

No patent can live long without the druggists' aid, and with a few exceptions, people do not want them badly enough to go to much trouble to get them, if you refuse to handle such.

Anyway, you do not have to give up the best shelves in your store to your stock of "patents." A place under the counter, and out of sight, is good enough for them. Use your shelves for a line of your own preparations, ones that really have some medicinal value to them, and which you can recommend from a knowledge of the ingredients contained therein, in place of a lot of patents of which you know nothing, the manufacturer of which is waiting to stab you in the back, in some advertisement.

As an example of some of the statements, I am going to give some extracts from advertisements which have appeared recently in the Lexington Leader.

In an "ad.," published in the Lexington Leader of May 19, 1911, appears the following:

"If your dealer offers something 'just as good,' it is probably better *for him*—it pays better. But you are thinking of the cure not the profit, so there's nothing 'just as good' for you. Say so."

Here are some choice statements from advertisements of this same firm:

"Do not let any unscrupulous druggist persuade you that his substitute of unknown composition is 'just as good' in order that he may make a bigger profit. Just smile and shake your head."

"No counterfeit is as good as the genuine and the druggist who says something else is 'just as good as * * * * *' is either mistaken or is trying to deceive you for his own selfish benefit. Such a man is not to be trusted. He is trifling with your most priceless possession—your health—maybe your life itself. See that you get what you ask for."

"You can't afford to accept a secret nostrum as a substitute for this non-alcoholic medicine of known composition, not even though the urgent dealer may thereby make a little bigger profit."

"Honest druggists do not offer substitutes, and urge them upon you as 'just as good.' Accept no secret nostrum in place of this non-secret remedy."

"Don't be wheedled by a penny grabbing dealer into taking inferior substitutes for * * * * *, recommended to be 'just as good.'"

"Do not permit a dishonest dealer to substitute for this medicine which has a record of 40 years of cures. 'No, thank you, I want what I ask for.'"

In the issue of May 20, 1911, the same paper publishes a large advertisement in which occurs the following:

"Do not let any dealer deceive you."

"* * * * * has given universal satisfaction for more than 30 years past, and its wonderful success has led unscrupulous manufacturers of imitators to offer inferior preparations under similar names and costing the dealer less, therefore, when buying *Note the Full Name of the Company.*"

And, again, this same firm says in an advertisement in the Leader of May 23, 1911:

"The wonderful popularity of the genuine * * * * * has led unscrupulous manufacturers to offer imitations, in order to make a larger profit at the expense of their customers. If a dealer asks which size you wish, or what make you wish, when you ask for * * * * *, he is preparing to deceive you, tell him that you wish the genuine, manufactured by the * * * * *. All reliable druggists know that there is but one genuine and that it is manufactured by the * * * * * only."

I have a large number of such clippings, but I will not take up your time by reading them to you, any time that you care to see more, pick up almost any paper and you will find plenty of such advertisements.

Now, I really think this is an important subject, so much so that I am going to make the following suggestion, and you can do what ever you think best about it.

I would suggest that a committee of five druggists, members of the Kentucky Pharmaceutical Association, be appointed by this Association, and to be known as the Committee on Advertisements, and whose duty it shall be to appoint one or more druggists in each county of Kentucky to act with them in reporting to the main committee such advertisements as they consider as being unfair, libelous, indecent, vulgar or misleading in any way, that may be published in their community.

It should be the duty of such committee, if appointed, to notify any firm, person or corporation responsible for such advertisement, that the same is objectionable to the druggists of Kentucky, and that in case such advertisements be not withdrawn or modified in such manner as to be unobjectionable to the Pharmaceutical profession and to the public, the druggists of Kentucky will be requested to refuse to handle the goods of the offending firm, until such firm complies with the demands of the committee.

Furthermore, it should be the duty of the committee on advertisements to request all newspapers, journals, magazines, etc., circulating in Kentucky, to refuse to publish such objectionable advertisements.

Furthermore, it should be the duty of the committee to use all good and proper means in their power in securing the early passage of a model law, prohibiting any advertisement of a medicine, or appliance, for the relief, cure or mitigation of such diseases as Female Diseases, Venereal Diseases, Lost Manhood, Kidney and Bladder troubles, Constipation, Piles, etc.

Such a committee and law could do a great work in removing the stigma of such unjust insinuations as have been mentioned in this paper, also to purify the newspapers from the vulgar advertisements that many of them carry from day to day, and which has reached such an acute state that many of them are hardly fit to be seen in our homes.

BUYING SYNTHETIC REMEDIES.*

WILLIAM C. ALPERS, NEW YORK, N. Y.

A flurry of excitement went lately through the pharmaceutical circles of New York, when it became known that a number of employers and employes had been summoned before a city magistrate in an action brought by the manufacturers of synthetic remedies for violating the trade-mark laws. I have since received many inquiries, by word and letter, as to the legal status of this matter, some of my correspondents referring to a paper read by me before the Manhattan Pharmaceutical Association some years ago touching on this subject. As

*Translated from the *Apotheker Zeitung*.

these inquiries are quite numerous and as the matter at issue is of considerable importance to every druggist, I hereby give my views and understanding of it to the pharmaceutical press.

That our trade-mark laws are antiquated and iniquitous is admitted by every one who takes the trouble of studying them in all their bearings. They were formulated at a time when trade conditions were entirely different from what they are now. Their prime object was to protect the inventor and manufacturer against fraudulent imitators. As there were at that time no foreign possessors of United States trade marks, or only very few insignificant ones, no distinction was made between domestic and foreign goods, inventions and rights. The laws, therefore, are drafted unreasonably sweeping in one direction and unreasonably narrow in another. That some foreign manufacturers have made use of these conditions to their own advantage and the exclusion of domestic competition, is well known—but this is not the matter under discussion at present. The fact is that these laws exist and that every citizen of the United States is bound to obey them. To show disapproval of an antiquated or bad law by violating it is a risky procedure and doubtful remedy. Relief can better be brought about by strictly enforcing it and showing the public its iniquity. Lately an addition was passed by the Legislature, making the violation of a trade-mark law a felony punishable by fine or imprisonment, or both.

The action of the manufacturer was based on this new law and a number of druggists were summoned before the magistrate for violating it, the charge being that they had sold certain goods that were not trade marked, when articles like Aspirin, Pyramidon and others were called for. No charge of chemical or therapeutical substitution was made. The magistrate put the defendants under bail and the cases went to the District Attorney, where they are at present pending. In order to understand the matter thoroughly and answer the many inquiries put to me, I requested a number of my correspondents to send me samples of these so-called spurious goods, original packages and tablets, all of which had been bought from irresponsible dealers under the assertion that they were genuine. An examination of some of these revealed the following facts: Most of the packages seemed to be original and genuine as far as ocular examination could reveal, which evidently led many druggists to buy them as genuine. The price paid was from 10% to 20% below the market price. The weight of the contents of all these packages was short. A package labeled Pyramidon contained only 397 grains instead of 437½ grains. Packages labeled Aspirin varied from 375 to 400 grains. Admitting now that the contents were genuine, the unlucky buyer saved nothing by the lower price and risked the reputation of his whole life for an imaginary saving—in reality for being deceived. Examination of the tablets gave a more astonishing result. Their weight was generally between 5 and 6 grains; but none of them contained more than 2 grains of Aspirin, some much less. A sample of spurious Protargol showed 4% of silver and contained more than 60% of insoluble matter, while the genuine, according to the manufacturer's claims, contain 8.3% of silver and is entirely soluble in water. What now did the druggist who bought this stuff gain by paying a lower price? If he wished to sell so-called 5-grain tablets that contained only 1 or 2 grains of active medicament, he could mix the drug with milk

sugar and have them stamped out by almost any manufacturing pharmaceutical house at a much lower price than he paid for them. He paid much too dear for his whistle. He was cheated himself and undesignedly deceived his physicians and the public by selling these goods. He cannot hold the seller responsible and must take the consequence of his error of judgment himself. His credulity may cost him more than he possibly could save. He certainly did not intend to deceive and cheat, yet he did so unintentionally. For I speak here of those druggists who thoughtlessly are led into such practices, without any intention of doing wrong. I have nothing to do with those who knowingly deceive.

No matter what we think of the motives of the manufacturers, there are two lessons in this affair that stand out strongly and boldly, and should be heeded by every self-respecting druggist:

First: Buy goods of this nature only from responsible wholesale dealers who are willing to protect you and stand by the genuineness of what they sell.

Second: Join your state and the national association and by your membership—if you will not help actively—contribute your mite to the fight against these iniquitous laws. Urge your association to put every other matter aside, until our trade-mark and patent laws are altered in such a way that all parties concerned—manufacturer, wholesaler, retailer, physician and public—are fairly and equally protected. If every druggist in the country would heed these two lessons, many things about which we daily complain would be better.

When reform of the antiquated laws that lie at the bottom of these undesirable conditions is urged, the majority of pharmacists and many associations think that such reform means in the first place a fight to the bitter end with the manufacturers. This belief is a fundamental error and the main reason why so little has been accomplished. Nor will the abuse ever be remedied on these lines. There exists a certain correlation and a common field of interest between all and this field should be cultivated. Not fight, but cooperation will bring results. If once the existing mistrust and prejudice is removed and all—inventor, manufacturer, wholesaler, retailer and physician—join hands, each one admitting that the others have just claims and rights, there will be no doubt of success and no legislature or Congress will resist the harmonious demands of all parties concerned.

Papers Presented to Local Branches

THE MAKING OF CANDY MEDICINES.*

BERNARD FANTUS, M. D., CHICAGO.

The problem of pleasant medication for adults is well taken care of by the pill, the capsule, and the elixir; but with children our means have been much less satisfactory. "I simply cannot get my child to take this medicine," is the report one often receives from the fond and too indulgent parent, sometimes when the medicine was really unobjectionable or even pleasant. To some children anything given by spoon carries with it the idea of nastiness. This lead me, in view of the child's great love for candy, to experiment upon devising candy forms for medicines. Starting with confection of senna, I soon discovered that children did not consider it a confection. Evidently there is a great difference between the pharmacopœial and the child's idea of a confection. The pharmacopœial lozenges, with the exception of the santolin troches, were likewise unsatisfactory. So I took lessons from a real confectioner to determine what candy form would be most suitable for purposes of medication. Sulphur taffy and cod liver oil chocolate creams were failures. As a result of these studies in the candy shop I finally arrived at the following conclusions: (1) Candy medicine to be successful must be absolutely pleasant and must disintegrate rapidly in the mouth, for a sick child will usually not suck or chew a candy as a healthy one would. (2) Only tasteless or almost tasteless medicaments can be given in candy form. (3) The fondant is the most suitable form for the purpose of candy medication, as it disintegrates rapidly. (4) As the fondant is rather troublesome to prepare and becomes hard with age, while a lightly compressed tablet made from powdered sugar is very similar to the fondant and keeps well, the latter is evidently the practical form for candy medication. This form has already been in use for the administration of calomel and of phenolphthalein.

A systematic search showed that quite a number (about twenty) other medicaments could be put up in candy form; and use of these in practice has been so pleasing, that I would be very sorry indeed if I had to get along without them. I believe that candy medication has a future, but am afraid that this future will be in the form of proprietary exploitation and of self dispensing by physicians, unless pharmacists equip themselves to prepare these tablets.

In the past, pharmacists seem to have been afraid to attempt tablet making. It is generally supposed to be a difficult process, requiring special skill and expensive machinery. With your permission, I shall proceed to demonstrate that this is not the case. A tablet machine that would be satisfactory for putting up

*Read before the Chicago Branch of the American Pharmaceutical Association, December 17, 1912.

prescription quantities of tablets, e. g. Whitall Tatum Company's, can be bought for about \$10. It will work satisfactorily, if the punches are kept clean, free from scratches, and slightly oiled with liquid petrolatum. It takes no more time or skill to make tablets than it does to make pills or suppositories. Preliminary granulation and drying are not necessary, if A. Schleimer's suggestion (published in *The National Druggist*, Feb., 1909, p. 54) is made use of, to add 3 percent. of cacao butter to the powder, which serves at once as a cohesive, rendering granulation unnecessary, and as a lubricant, preventing sticking in the die. The only objection to the cacao butter is that it is liable to become rancid, hence it is suitable only for the extemporaneous preparation of tablets. Have found, after a little experimenting, that low melting paraffin answers the purpose just as well as cacao butter, and does not become rancid. A further addition of 3 percent. talcum powder is likely to become necessary to keep the tablets from "picking," i. e., sticking to the punches.

As a typical example of a formula for a candy tablet, we may take:

ARSENIC TRIOXIDE, 1/100 GRAIN.

Arsenic trioxide	1 grain
Paraffin, low melting point.....	9 grains
Talcum	9 grains
Malachite green, 1% solution.....	10 minims
Spirit of peppermint.....	5 minims
Powdered sugar	281 grains

Having thoroughly triturated the arsenic trioxide with the sugar, add the malachite green solution and the spirit of peppermint and triturate until the green color is perfectly uniform. Then add the paraffin and triturate again. Finally, the talcum is added, not by trituration, however, but by stirring with a spatula; and the powder is ready for compression in the tablet machine. Use 5/16 inch die and punches, and make from above quantity 100 three-grain tablets.

The same formula may be used for making candy tablets of tartar emetic, calomel, mercury biniodide, mercury protoiodide, mercury with chalk, nitroglycerin, elaterin, hyoscine. Of course any other harmless coloring or flavoring may be used.

Insoluble substances that are given in larger doses, such as bismuth subnitrate, chalk, magnesia, saccharated iron carbonate, or reduced iron, require at least twice the volume of sugar to be added to them to keep the insolubility of the powder from being noticeable.

Substances that have a slight taste, such as tannalbin, phenacetin, or digitoxin, are best disguised by the addition of 10 percent. of powdered cacao to the sugar. Chocolate tablets can usually be compressed without the necessity of adding cacao butter or talcum. Their flavor is improved by the addition of a little tincture of vanilla or of vanillin.

The most tasteless form of quinine I have been able to find is aristochin, which is considerably less bitter than euquinin or quinine tannate. The slight bitterness of aristochin is almost entirely overcome by the addition of a small amount (2 or 3 percent.) of sodium bicarbonate, and of cacao and sugar in the proportion previously mentioned.

The only sufficiently tasteless salicylate I have been able to find is salophen, which is easily made pleasant by the mere addition of sugar.

Of soluble substances very few are suitable to candy medication. Sodium bicarbonate one-half grain to four and one-half grains of sugar with rather strong peppermint flavoring makes a fairly palatable tablet. Hexamethylenamine, which has a sweetish taste, can be made into a very pleasant chocolate tablet by using the following formula:

HEXAMETHYLENAMINE, $1\frac{1}{4}$ GRAIN.

Hexamethylenamine	25 grains
Cacao powder	75 grains
Powdered sugar	400 grains
Tincture of vanilla.....	15 minims

Make into 100 five-grain tablets.

For the salines, I have not been able to devise a candy form. Have therefore selected sabromin and sajodin, which are the most tasteless representatives of bromides and of iodides, respectively, that I know of. These are easily put up in the form of palatable tablets, especially by the use of cacao.

One objection that can be urged against candy medication is that children might poison themselves by eating too many of them at one time. This is indeed a serious objection, which can, however, easily be overcome by not prescribing more tablets than could be taken at one time without danger.

In the candy tablet, Dr. Robert M. Fuller's invention has reached its highest utility. Perhaps some day candy tablets may be official in the Pharmacopœia. If all druggists were equipped to prepare them extemporaneously, so that doctors could modify the dose and combination to meet the needs of the case, they would obtain their highest opportunity for doing good, and would fill a long felt want.

THE PHARMACY OF THE OXYCHOLESTERIN OINTMENT BASES.*

J. ROEMER, WHITE PLAINS, N. Y.

The history of the discovery of what is termed a mixture of iso and oxycholesterins or waxy alcohols is one of manifest interest and the details of which were ably presented by Dr. Unna before this branch at the meeting last June.

In so far as the chemistry applies to these compounds, little appears in the literature, but their peculiar properties in relation to the therapeutics of ointments will no doubt furnish an incentive for wider knowledge.

From the pharmaceutical point of view we are particularly interested, and the little that is known concerning them is of great value, and the possibility and even probability of these compounds finding a wide field of usefulness, makes it necessary that the pharmacist to some extent become acquainted with their pharmaceutical applications for which they may be desired.

The first question that presents itself is what are the iso and oxycholesterins,

* Read before the New York Branch, December 9, 1912.

which impart such an all important property on account of which they find special usefulness? The nearest we can get to the answer for this is that they are said to be waxy alcohols, to which has been assigned the name, "so-called oxycholesterin group," unsaturated alcohols of an homologous series, perhaps included in the group starting with the formula $C_{10}H_{20}O$ and ending with the formula $C_{26}H_{44}O$.

This question to pharmacy then must remain for more specific determination, but sufficient for our present demands is the information that they are obtained through processes of alcoholic saponifications and fractional distillations from the washings of wool fat, they are, however, not supplied as such, but are mixed with certain proportions of neutral ointment bases, to which they impart the desired therapeutical properties.

References to greater or less extent will be made to the statements in the article on this subject by Dr. Unna, and first we note that he states that the base supplied consists of 5 percent. of free alcohols of the iso and oxy cholesterin group, together with 95 percent. of petrolatum; this produces what is known as anhydrous eucerin, and this, with addition of a certain amount of water, yields "Eucerinum cum aqua" or, as commercially known, "Eucerin."

These then are assumed to be the preparations supplied and both of which so labeled were obtained.

The Eucerin anhydrous is an unctious pale yellow mass of petrolatum-like consistency; the Eucerin, an unctious mass of cream color appearance and softer consistence; Eucerin anhydrous is transparent in thin layers, amorphous, and possessing a very faint odor, peculiar to hydrocarbons, tasteless, neutral in reaction; these properties are merely noted for the substance at present obtained but are no criterion for what may hereafter be supplied, and which properties must depend upon the choice of base which is used for admixture, the object for enumerating these properties is to show that considered from formulas as given by Dr. Unna this is not the same, as further facts will prove.

Accepting the formula as given, it occurred that possibly a separation may be effected and with this idea in view a number of methods were tried which finally resolved itself in the process of treating the mass with sufficient ether to effect solution and which by addition of ethyl alcohol caused a separation of a white paraffin like body; this was removed by filtration and the filtrate subjected to fractional distillation, first obtaining the ether, and then the alcohol, with an oily residuum remaining and which constituted 27 percent. of the original anhydrous eucerin.

Drying the paraffin-like mass retained on the filter, this was found to represent 71.6 percent., making a total of 98.6 percent. of the original, with a loss of 1.4 percent., which was later obtained from ether by evaporation, the alcoholic distillate retaining nothing.

The paraffin-like body obtained, together with the oily residue, developed the fact that petrolatum as such was not the base, although they were found to be hydrocarbons and that the oxycholesterin group was wholly retained in solution by the oil.

From tests applied, namely, the only one so far as ascertained producing any

distinctive reaction, concentrated sulphuric acid, no cholesterin remained in the paraffin mass, further attempts to further separate this group from the oil proved unsuccessful, due to limited time.

Now, comparing the statement by Dr. Unna that this anhydrous base will carry an amount of water up to 500 percent., with the statement on label for same, we find there, that this capacity is only 150 percent., while the base, supposedly already containing water, will carry 200 percent. To reconcile these differences as to exact meaning would serve no purpose other than satisfying an opinion, sufficient, that the product supplied is somewhat different from the one spoken of in Dr. Unna's address, but this does not materially affect its properties as I will later demonstrate.

As to tests for identity of these cholesterins, the one devised by Lifschuetz, the acetic sulphuric acid test with the spectrum, no doubt affords a distinctive reaction, but one which is as characteristic is concentrated sulphuric acid alone, by contact, which produces a clear, reddish brown ring, in distinction to the acetic-sulphuric acid, which produces a light brown to brown coloration.

Admixture with concentrated nitric acid produces no reaction in the cold, but on heating, the acid is practically decomposed with evolution of nitrogen tetroxide and a light brown color is imparted to the liquid.

It is indifferent to concentrated hydrochloric and acetic acids, as likewise to strong solutions of the hydroxides of sodium, potassium and ammonium.

Its solution in ether, benzin, chloroform and carbon tetrachloride is opalescent and on standing the solution in ether and benzin clear from above downward and the solution in chloroform and carbon tetrachloride clears from below upward.

The oily portion separated, and which contains all of the cholesterins, is non-saponifiable with alcoholic potash.

As to eucerin anhydrous this answers well for all purposes and will carry water up to four times its own weight; this is effected by gradual addition and thorough incorporation, and in this respect justifies its ability and contradicts the label, while the eucerin will carry an amount of water proportionate to this and dependent on amount already added.

That for pharmaceutical purposes it will assume a place occupied by no other base heretofore known may well be considered probable from its physical properties of carrying enormous quantities of water aside from its stability, neutrality, and its indifference to most medicaments used in ointments.

Mixtures prepared with this base with varying proportions of water up to 400 percent., and subjected to ranges in temperature from 50° to 100° F., and kept for days under these conditions have remained permanent.

The basis of the working formula adopted was one carrying two parts of 200 percent. of water, with which experimental ointments containing boric acid 10 percent., zinc oxide 20 percent., yellow mercuric oxide 10 percent., phenol 3 percent., sodium hyposulphite 10 percent., silver nitrate 5 percent., and potassium iodide 10 percent., were made, all of which yield ointments representing the specific therapeutic agent that answers the demand for all that is desired.

This formula also was employed for cold cream, to which any desired odor may be imparted.

Particular reference is made to the statement for its capacity for metallic mercury and the simplicity and rapidity with which this can be effected.

In so far as the quantity of mercury is concerned, the statement holds true, but as to simplicity and rapidity, there must be a great latitude in the meaning of the words as used by Dr. Unna. The exact time was not noted, but during three days, as time permitted and elbow grease held out, it was rub, rub, rub.

In respects to Balsam Peru, this is a failure and no appreciable amount of water can be incorporated, separation takes place and an unsightly ointment results.

Similarly with ichthyol, it is inadvisable to use more than half its weight of water.

With solution of ammonium hydroxide, subacetate of lead solution and aluminum acetate solution these will, using part for part by weight, produce pharmaceutically perfect ointments; glycerin in any quantity equal to carrying capacity, to any consistency will produce perfect combination. Alcohol is not as readily carried and difficulty is experienced in incorporating an equal part.

Reverting now again to the cholesterin to which this property is attributed but of which, in isolated state, none is obtainable and have not been separated, it is with interest we look forward to such and ascertain under what precise condition they act.

The oily residuum obtained by distilling the filtrate before mentioned presents a peculiar behavior toward different bodies and through experiment it developed that in admixtures with alcohol, chloroform, carbon tetrachloride and ether, the capacity for carrying water was to a great extent impaired and no permanent emulsification was possible by addition of water.

Assuming from Dr. Unna's statement from experiments carried out that Anhydrous Eucerin will absorb or carry 50 percent. water and attributing this to the 5 percent. of the cholesterin group, it follows that 1 part of this substance imparts a capacity for carrying 80 parts of water, a quantity in itself which is enormous.

But a most peculiar condition developed by trying numerous bodies in conjunction with this. By itself, as above stated, it will carry 80 parts of water, but alcohol, chloroform, carbon tetrachloride and ether impair this property, while on the other hand the addition of benzin produced a most peculiar phenomenon. By using 5 drops of this oily residuum, which being 27 percent. of the whole, this itself will represent 18.5 percent. of the oxycholesterin and 18.5 percent. of 5 drops will equal approximately .9 of a grain, adding to this a small quantity of benzin 30 minutes, developed the fact that it will carry by gradual additions, water up to 900 parts; in other words, the intensity imparted by benzin increases its capacity for water 11¼ times the original capacity.

Applying this idea to the base as furnished it holds equal to this condition, and by addition of an amount of benzin equal to amount of base taken, an ointment is produced which can and does hold 9 times or 900 percent. of water compared to the original amount ascertained.

Following this out to experimental conclusion other hydrocarbons were tried

as mineral oil and liquid petrolatum and these likewise increased the physical properties for its carrying capacity for water.

Benzol and xylol of the aromatic group also acted in similar manner, but to lesser intensity.

Trying out experiments with vegetable oils olive and almond, and with lard, produced mixtures which would carry no water whatever and the conclusion is reached that with the employment of the cholesterins for ointment bases, the hydrocarbons *are essential*, for it is to them in combination that this property is imparted.

SUGGESTIONS FOR THE EXTENSION OF THE PROPAGANDA.*

JAMES BAILLIE, ST. PAUL, MINN.

The subject upon which I have been asked to speak appears upon the program of this meeting as "A System for the Extension of the Propaganda."

To formulate such a system would, I am afraid, entail months of careful thought and practical experiment, and to attempt to do so in the short space of time allotted to me would be folly. The best that I can therefore do is to offer a few suggestions upon which such a system might be founded. The main idea of this propaganda, as I understand it, is to eliminate as far as possible the exploitation among physicians of the products of the specialty houses and introduce in their stead the preparations of the U. S. P. and N. F.

To do this would mean the strenuous cooperation of all the retail drug trade, and the basis of all true cooperation is well directed individual effort, each unit working like a well-oiled piece of machinery for the benefit of the whole.

Each individual must find his place in the plan and do his utmost to extend the knowledge of the U. S. P. and N. F. preparations among the prescribing fraternity and to do this means more than mere talk and getting together schemes. It means active, practical, go ahead work. It means that every pharmacist must give more time and study to improving his own knowledge of the standard preparations, so that he can speak of them as of something he is really intimate with.

In the beginning the pharmacist has himself alone to blame for the present condition of affairs. He has let this, the most important part of his calling, slip from him by his own indifference and lack of true professional knowledge, ability, and pride in his own handiwork.

The physician *cannot* be held responsible. The specialty houses have only filled a place which the pharmacist ought never to have left vacant, and in the great majority of cases the physician has been forced to supply his own and his patients' needs where he best could, largely, I am afraid, to his own, and to the detriment of the drug trade, not to speak of the patient who has to foot the bill and is in the end the greatest sufferer.

*Read at the November 21st meeting of the Northwestern Branch at Minneapolis, Minn.

The first step to be taken in the formation of any plan to better the conditions as they now exist, should begin with the training of the young pharmacist. It is for him to take care of the future.

Educate him to the fuller appreciation of the importance of being first a pharmacist in the true meaning of the word. Teach him to realize that with *him* lies the making or marring of what should rank as one of the high professions. Give him every opportunity to become proficient in every branch of his professional work. Help him to become a master in the compounders' art. Were this done and followed up the propaganda would take care of itself and the value of the U. S. P. and N. F. preparations would be recognized by the medical profession, through the men who had been trained and who have given their time and thought to prepare them.

To follow this method would of course take time, but it would be the surest means of attaining a desirable end, and the recognition that apart from a commercial business pharmacy ranks as high upon the professional scale as the practice of medicine itself.

The pharmacist, if he wishes to regain the confidence of the physician, should be able to demonstrate his ability to prepare and furnish by his own work a line of reliable U. S. P. and N. F. preparations or at least be able to guarantee by actual tests the preparations he supplies. He should make the prescription end of his business the most important part of it instead of as sometimes a mere side-line; that is, of course, if he is in favor of this propaganda. If he is not, why not remove his prescription case entirely and leave that work to those who are qualified and willing to undertake it and make it their whole business.

This brings up a point which is quoted in this month's Journal of the A. Ph. A. from the Pacific Drug Review in favor of two different kinds of pharmacies. One to be called the department drug store, where everything that is handled in the modern drug store would still be adhered to except the dispensing of prescriptions and the compounding of medicines for the treatment of disease and sickness. The other to be the real pharmacy in name as well as work; to be run on purely ethical lines and to be specially registered as such, and open to the most rigid inspection. The dispensing of prescriptions and compounding of medicines to be the main issue in such a place and all side lines and sundries to be eliminated except those which are immediately accessory as sick room requisites or physicians' supplies. It is difficult to see why such a plan should not be feasible or possible.

There are many in the drug trade at present who have neither time nor inclination for the necessary exacting and fussy work of the compounder, but whose tastes run more along the broader lines of commerce. Let them therefore develop along the lines of least resistance to their desires and make the most of the many side lines which the present system seems to demand, leaving the purely professional duties to those who like it and could make a success of it, unhampered by commercialism. A system like this would leave the man of professional desire, time for perfecting himself and improving his work. In due course his efforts would bear fruit in the shape of public and medical confidence, with the attendant remuneration for skilled work well done.

Under the conditions recently in vogue any plan for the furtherance of U. S. P. and N. F. propaganda would be most difficult to solve and still more difficult to follow.

There is a lack of unanimity in the drug trade which is not easily overcome. This is due in a great degree to the passive antagonism between the professional and commercial branches of the business. Could the two be reconciled and fused together, something might be found which would prove an easy solution for the problem.

If the druggists could meet and arrange, through committee or otherwise, to prepare or have prepared samples of U. S. P. and N. F. preparations and begin a crusade among physicians to actually demonstrate the superiority of these preparations and supply suitable literature, a measure of success might be attained. To do this would only mean following the plan of the specialty houses in getting in their detail work and keeping at it all the time. No half-hearted methods would have much chance to succeed and the earnest cooperation of every druggist would be necessary to carry the campaign to anything like a successful issue. A good form of literature for distribution among physicians would be an abbreviated N. F. to include some of the U. S. P. preparations; a small edition containing the names of the preparations, with doses and quantities of each active ingredient in a dose, and where the general medicinal properties of each preparation could be seen at a glance. A therapeutic index could be added whereby a number of formulas would be found for each indication. This book could be arranged and compiled by a committee of the Pharmaceutical Association and sent to the druggists who were interested and by them distributed to the physicians in their locality.

Such a scheme as this might help somewhat. Through some such means pharmacy, although losing more and more ground professionally, may recover somewhat her former prestige and by adapting herself she will override many obstacles and mend the breaks occurring in her commercial and technical foundations.

A better understanding between the professions of medicines and pharmacy ought to be striven for and I would urge that both physicians and pharmacists owe to the public not merely the services which they are paid for, but that they owe the service due from superior knowledge to ignorance.

I would reiterate again that the best basis upon which to build a campaign with any great measure of success to follow is the training of the pharmacist of tomorrow in the highest branches of his art and instilling into him the highest ideals. He needs time for this and I would suggest even that a revolution should take place in the method of the present. Shorten the hours of labor and get away from the popular idea that a drug store is a place of public convenience. Why should the druggist of America make himself so cheap, and place himself at the beck and call of all on Sunday? It is not so in other countries and should not be necessary in this, but the druggist is alone to blame—he has made of himself a convenience. His store is open day and night to supply the demands of a too exacting public. Not to fill prescriptions, but to supply the late birds with

their cigars and sodas, etc., a good place to get stamps and information, and the recognized meeting place for those who have a date.

In this way the energies of himself and his staff are sapped and wasted. The midnight oil might be burned to better advantage. The time might be spent in study or if in nothing better than in healthful recreation.

The younger men, were things changed, might better themselves in many ways, becoming not mere department clerks, but proficient professional men.

In European countries the pharmacist has no such conditions to face and why should it be here in this land of freedom.

There the pharmacist can have his business done in an eight or ten-hour day and have his Sundays practically to himself. It only needs a beginning, a regular pull together to make it so here. Cut at the root of the matter and work from the bottom and in time such a propaganda as we are now discussing will become simply a memory. Use it meantime as a stepping stone towards the ideal and realize that there is more in true pharmacy than what we are now getting out of it; there is the professional pride, enthusiasm, mental growth, and inspiration which comes with increase of knowledge, and the broader view of life and its problems which knowledge alone can give.

SUICIDE BY DRINKING A SOLUTION OF SALT.

C. HEMAN BARLOW, GREENVILLE, MICH.

An editorial on "Poisoning from Common Salt" (*The Journal*, Oct. 5, 1912, p. 1297), speaks of the condition as a rare one. I wish to give my experience with several cases of fatal salt poisoning in China.

Throughout Chekiang Province, and probably in other provinces of China, the drinking of a saturated solution of salt is a common mode of committing suicide, and there is none more difficult to treat. In only one case did I succeed in securing recovery. Salt is taken for suicidal purposes sometimes in a common saturated solution made with water as the solvent, and sometimes in the brine from salted kraut.

Poisoning by salt usually presents a picture of high temperature and pulse, purging, vomiting and spasm. In the case in which I was successful in securing favorable results I washed the stomach with 2 quarts of a 1 percent. solution of silver nitrate, using a stomach-tube. The washings were chalky white at the start and were kept up till the solution coming away was just slightly white. Then warm tea was used till the stomach was thoroughly cleansed. Large amounts of tea were taken by mouth and a purge given. The patient was then removed to the hospital and made a good recovery. Although suicide is extremely common in this part of China the use of salt solution is not so common as suicide by other less painful methods. The amounts taken vary with the determination of the person taking it, but usually are from 1 to 3 rice bowlfuls—a pint to a pint and a half.—*Journ. A. M. A.*

Report on the Progress of Pharmacy

For the Year 1912

(Seventh Installment.)

Transmutation of Elements: Present Status.—Briefly reviewing the endeavors made to prove the possible transmutation of the elements, the "Pharmaceutische Zeitung" (Sept. 18, 1912) describes the present status of these investigations as follows: In 1907, Ramsay and Cameron made the surprising statement that they had succeeded in the conversion of copper into lithium. This statement was shortly thereafter proven by Madam Curie to be erroneous. It is now again asserted that these two scientists have succeeded in the transmutation of elements. Distilled water was placed in contact with a very small quantity of "Niton," with the result that beside the expected liberation of oxygen and hydrogen, "Helium" was also produced, and, furthermore, the lines of "Neon" were also recognized in the resulting gaseous mixture. These results are regarded by Ramsay and Cameron as indisputable proof of the transmutation of an element. Inasmuch, however, as these experiments were made with the element "Niton," but recently discovered by Ramsay and subjected to limited study only, the claim of the successful transmutation of an element should not be unconditionally accepted.—Pharm. Zeitung, LVII (1912), No. 75, 757.

Bismuth Carbonate: Improved Test for the Presence of Nitrates and Commercial Quality.—Walter Ryley Pratt has found a modification of the Sprengel process for determining nitrates in water to be well adapted and quite reliable for the estimation of nitrates in commercial bismuth carbonate. The method depends on the color reaction produced by sodium or ammonium nitrate with phenol-disulphonic acid in presence of sulphuric acid, due to the formation of a derivative of nitrophenol, and is equally effective for the quantitative estimation of soluble nitrate and of insoluble nitrate. The phenol-disulphonic acid used for the colorimetric

assay was prepared by heating 3 gm. of pure phenol with 20 cc. of pure concentrated H_2SO_4 on a water-bath for six hours. The standard nitrate solution contained 0.7215 gm. pure potassium nitrate per litre (1 cc.—1.10 mgm. nitrogen), and with these reagents a series of shades were prepared from solutions containing respectively 1.100, 1.175, 1.50 mgm. of nitrogen. The samples of bismuth carbonate were then tested as follows: The bismuth carbonate was thoroughly triturated to break down aggregated masses, and 0.02 gram treated directly with the phenol-disulphonic acid. On the addition of ammonia, the bismuth was precipitated and filtered off. The filter-paper was washed with about 50 cc. of distilled water, the color being easily washed away from the precipitate. The filtrate was made up to 100 cc. in a Nessler cylinder and compared with the standard shades. Using a dilution of approximately 1.100 to 1.50 mgm. of nitrogen it was found that the shades could be easily and accurately matched. The amount of nitrogen present, expressed in milligrams, multiplied by the factor 102.14 gives the percentage of bismuth subnitrate present (calculating the total nitrate as BiONO_2). If the factor 19.29 is used, the result gives the percentage of nitrate as N_2O_5 .

Of seventeen samples of bismuth carbonate examined only one showed a total absence of nitrates, two showed traces, while the others showed quantities varying from 1.15 to 3.27 percent., though only two of them exceeded 1.98%. The author considers his research shows that a limit of 2 percent. of total nitrate, calculated as BiONO_2 , is generous, and that it can be readily and satisfactorily determined by the color-test modified as described. It seems curious that so many of the samples should contain sulphate, which no doubt comes from the sodium carbonate used in the manufacture. He states that more complete

washing would be a decided advantage, and that it would be advisable to insist on a limit of alkalinity, as one or two of the samples examined were decidedly impure in that respect.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 152.

Lead: Determination in Chemicals.—G. D. Elsdon directs attention to certain difficulties encountered in carrying out Warington's colorimetric test for lead and describes two processes which he has found satisfactory in the determination of lead in chemicals, either of which is reliable:

1. The required quantity of the chemical is dissolved in water, the solution filtered through an 11.0 cm. filter-paper, and the lead estimated in the filtrate in the usual manner. The filter-paper is then washed with five successive quantities of 10 cc. of 0.6 percent. acetic acid, the washings being mixed. The lead is then estimated in these washings by adding 3 cc. of saturated sulphuretted-hydrogen water, and comparing the color produced with standards (made with 0.6 percent. acetic acid) containing known amounts of lead. It is important that the comparisons be made with standards containing the same strength acid as that used for the washings. The lead so found added to the lead found in the original filtrate will give the total lead in the chemical.

2. The chemical is dissolved in water and 0.5 cc. of 60 percent acetic acid added for every 50 cc. of the solution; the solution is then filtered. The filtered solution is then made alkaline with ammonia, and the lead estimated as usual.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912; 143.

Methyl Alcohol: Expeditious Detection in Pharmaceutical Preparations.—Franz Lörinsch proposes the following simple and quick method for the detection of methyl alcohol in pharmaceutical preparations, such as spirits, fluidextracts, tinctures, etc. Having eliminated iodine, if present, by decolorization with thiosulphate, or free ammonia by acidulation with sulphuric acid the preparation is subjected to distillation. To 1 cc. of the distillate 1 cc. of 25% diluted sulphuric acid and 8 cc. of 1/10 N potassium permanganate solution are added, the mixture allowed to stand about 10 minutes, and filtered; 1 cc. of the filtrate is then mixed with 1 cc.

of a 3 percent. solution of iron albuminate, and 2 cc. of concentrated sulphuric acid is carefully added, whereupon an intense-violet colored ring is developed at the zone of contact of the two liquids due to the presence of formaldehyde produced from methyl alcohol contained in the preparation under examination. In this test the albuminate of iron may be replaced by 1 cc. of a mixture of equal parts of milk and water to which 1 drop of solution of ferric chloride has been added.—*Ztschr. d. Allgem. Oesterr. Apoth. Ver.*, 1912, No. 35.

Methyl Alcohol: Toxicity.—In a paper read before the British Pharmaceutical Conference, Thomas Tyrer and F. C. Gosling observe that the toxicity of methyl alcohol is now placed beyond doubt. Attempts to ascribe the toxic quality to other constituents of commercial methyl alcohol and wood naphtha have failed, and there is no doubt that methyl alcohol is itself toxic.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 128.

Formaldehyde: Examination of Commercial Solutions and Tablets.—In a paper read before the British Pharmaceutical Conference, 1912, C. H. Hampshire and S. Furnival report the results of examination of eleven commercial samples of formaldehyde solution and eighteen samples of tablets and describe the methods employed for the determination of their constituents. The *specific gravity* at 15.5° C. of the solutions varied from 1.0804 to 1.0886. The *formaldehyde* content, which was determined by the method of Lemme and adopted in the G. P., ranged from 35.38 to 37.33 percent. by weight. The *methyl alcohol* content, as determined by the method of Blank and Finkenheimer, varied from 10.16 to 17.22 percent. by weight; the *acidity*, calculated as formic acid, varied from 0.043 to 0.085 percent.; the *ash*, determined by evaporation and subsequent ignition in platinum, was exceedingly small, ranging from 0.0029 to 0.048 percent., with only traces in two cases, and none at all in two others. The method of the "Codex" for detecting the presence of *acetone*, proved unsatisfactory; but by a method of their own devise, which enabled the detection of as little as 0.2 percent., none of the samples gave indications of more than a trace, and in one case it was entirely absent. Regarding the formaldehyde tablets, the results show that

many of the tablets on the market contain much less formaldehyde than is required by the formula of the B. P. Codex.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 133.

Commercial Formates: Revision of the Formulas Given in the B. P. Codex.—Asked to supply sodium formate answering the requirements of the B. P. Codex, Thomas Tyrer and F. C. Gosling found the article in stock to be in well-defined prismatic crystals containing two molecules of water of crystallization, instead of one as stated in that work. The authors were unable to prepare

Sodium Formate containing only 1 molecule of water, and recommend, in accordance with their experience and the variation in water content of six commercial samples, from nil to 36%, that the formula should be amended to 2 molecules of water for the true crystallized salt. ($\text{NaCHO}_2 \cdot 2\text{H}_2\text{O}$).

Other chemical formulas for formates were also investigated and the corrections made, as shown in the following summary:

B. P. C. Formula

Sodium Formate.....	$\text{NaCHO}_2 \cdot \text{H}_2\text{O}$
Potassium Formate.....	KCHO_2
Lithium Formate.....	$\text{LiHCO}_2 \cdot \text{H}_2\text{O}$
Calcium Formate.....	$\text{Ca}(\text{CHO}_2)_2$
Ferric Formate.....	$\text{FeC}_6\text{H}_5\text{O}_{12} \cdot \text{H}_2\text{O}$
Ferrous Formate.....	$\text{Fe}(\text{CHOO})_2$

Established Formula

Sodium Formate.....	$\text{NaCHO}_2 \cdot 2\text{H}_2\text{O}$
Potassium Formate.....	KCHO_2
Lithium Formate.....	$\text{LiHCO}_2 \cdot \text{H}_2\text{O}$
Calcium Formate.....	$\text{CaC}_2\text{H}_3\text{O}_4$
Ferric Formate.....	$\text{Fe}_2(\text{CHO}_2)_6$
Ferrous Formate.....	$\text{Fe}(\text{ClHO}_2)_2 \cdot 2\text{H}_2\text{O}$

—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 157.

Calcium Lactate: Method of Preparing a Pure Salt.—The experiments of C. A. Hill and T. T. Cocking demonstrate that calcium lactate is liable to vary in composition according to the method of preparation, varying particularly in the amount of water of crystallization. It may be neutral or contain either lactic acid, calcium hydroxide, or calcium carbonate. Pure calcium lactate is readily prepared by precipitation of its cold saturated solution with acetone, washing the precipitate with acetone and then with ether.

A product thus prepared was neutral to phenolphthalein, and contained 70.97 per cent. of anhydrous calcium lactate calculated on the yield of 0.1394 gram of calcium sulphate from 0.3187 gram of the substance. The proportion of anhydrous calcium lactate calculated for the pentahydrated salt is 70.78 per cent. Regarding the solubility of calcium lactate, the authors have been unable to confirm the oft-repeated statements that the salt becomes insoluble with age. The widely divergent statements made in regard to its solubility do not appear capable of explanation on the ground that they were possibly made at different temperatures or with salts of varying hydration. In determining the solubility of calcium lactate care must be taken that the temperature does not rise above the point for which the observation is to be recorded, since solutions of calcium lactate appear to exhibit supersaturation in a marked degree. Experiments made by a method described, giving very concordant results, show the mean solubility of the hydrated salt ($\text{CaC}_6\text{H}_5\text{O}_6 \cdot 5\text{H}_2\text{O}$) to be as follows: At 0°C , 1 in 32; at 15°C , 1 in $18\frac{1}{2}$, and at 30°C , 1 part of salt in $12\frac{1}{2}$ parts of water.

The authors recommend the salt to be made official (B. P.) should be the hydrate $\text{CaC}_6\text{H}_5\text{O}_6 \cdot 5\text{H}_2\text{O}$; that it be required to be neutral, or very slightly acid with a limit of acidity stated; and that it be required to yield upon treatment with sulphuric acid, ignition, further treatment with sulphuric acid and re-ignition, not less than 41 or more than 45 per cent. of its own weight of calcium sulphate. Limits of lead and of Arsenic should also be introduced.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 155.

Alkaloids: General Method for Their Determination in Drugs.—Felix Daels describes the following general method for the determination of alkaloids in drugs: To 10 gm. of the dry powdered drug in a 400 cc. flask, add 200 cc. of chloroform, followed by 50 cc. of a 2 percent. solution of NaOH. Weigh the flask and contents, boil half an hour under a reflex condenser, allow to cool, and restore the original weight with chloroform. Then filter off 150 cc. of the chloroform solution through kieselguhr, shake the filtrate with 150 cc of acid solution of known titre, and filter (the acid solution?: Rep.) again through

Kieselnähr, collecting 100 cc. This represents, in addition to the alkaloid from 5 gm. of the powdered drug, a quantity of sodium hydroxide corresponding to 0.4 cc. of a 1/10 N.NaOH solution, which must be included in the calculation. The acid solution is titrated with 1/10 N.NaOH solution, using hæmatoxylin as indicator, and the values found, after deducting 0.4 cc., are calculated in the usual way. The author mentions some slight deviation from this general process which he has found expedient in the assay of several drugs: Cinchona, Ipecacuanha, Nux Vomica, Hyoscyamus, Aconite, and Belladonna.—*Jour. de Pharm d'Anvers*, 1912, No. 14.

Indicators of the G. P. V.: Review of Their Chemistry and Uses.—Eugen Nickel contributes a review of the chemical characters and uses of the indicators directed in the G. P. V. These are considered according to origin under three heads, vegetable, inorganic-chemical, and organic-chemical compounds, embracing under the first head: Litmus, starch and hæmatoxylin; under the second: Potassium chromate, ferriammonium sulphate, and potassium iodide; and under the third: Phenolphthalein, iodeosin, and dimethylaminoazobenzol. The details must be consulted in the original, in *Pharm. Ztg.*, LII (1912), No. 60, 696-697.

Phenolphthalein: Influence of Alcohol and Some Neutral Salts on End-Reactions.—E. Lenk and J. Monschein find that if ammonium chloride is added to a weak solution containing phenolphthalein, the red color disappears and more alkali must be added in proportion to the amount of water present. If, however, alcohol is added, much more alkali will be necessary; as more alcohol or water is added, the effect of the latter is seen to be greater to an increasing extent. In some of the cases recorded the amount of alkali required was thirty times as much when alcohol was added as when an equal volume of water was employed. Ammonium chloride may be replaced by magnesium sulphate or some other salts.—*Chem. Ztg.* May 11, 1912, p. 334.

Colchicine: Reactions.—According to C. Reichard's investigations colchicine is an alkaloid possessing but feeble reactionary properties. It is, however, distinguished from the prepondering majority of alkaloids, independent of its distinctive color, that it is

capable of crystallizing from its chloroformic solution in chemical combination with its solvent, and that its behavior towards reducing agents of all kinds is perfectly negative. An extremely characteristic property is the formation of a lemon-yellow solution in concentrated sulphuric acid, which is permanent on dilution with water, and the peculiar odor reminding of honey and wax which is manifested when even very small quantities are used. Colchicine is furthermore identified by its behavior to nickel sulphate, and particularly to the rainbow color display of a mixture of colchicine, water, and mercuric chloride.—*Südd. Apoth. Ztg.*, 1912, No. 73.

Hyoscyne Hydrobromide: Commercial Variation.—Experiments reported to the Brit. Pharmaceutical Conference, 1912, by H. Finemore and Dorothy Braithwaite point to the necessity of pharmacists for care in the examination of their stock of hyoscyne hydrobromide. An examination of six commercial samples showed that only four of them approximate in character to the pure laevorotatory compound.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 136.

Pilocarpine: Detection in Presence of Quinine.—M. G. Meillère takes advantage of the solubility of quinine chromate and insolubility of pilocarpine chromate in chloroform, for the detection of pilocarpine in ointments, hair dressings, etc., containing both alkaloids. The faintly acidulated solution of alkaloids is treated with potassium dichromate as long as a precipitate forms, and then extracted with chloroform as long as this becomes colored. On the addition of chloroform and oxygenated water (=Solution of Hydrogen Dioxide) to the residual liquid, the characteristic color reaction of pilocarpine manifests itself if present. The quinine is detected in the chloroform solution after eliminating the chromic acid with ammonia.—*Journ. de Pharm. et Chem.*, 1912, No. 3.

Anhydrous Crystalline Quinine: Production.—J. Ville describes a rapid and easy method for the production of anhydrous quinine in a crystalline state. A current of air charged with ammonia is driven through an aqueous solution of quinine hydrobromide heated on a boiling water-bath, and kept at that temperature during the whole operation. The quinine is thus precipitated in white,

crystalline lamellae, which when washed and pressed between porous plates contain no water of crystallization. It melts at 172°-173°, and on cooling becomes a crystalline mass of fine needles.

Quinine Trihydrate is obtained by the author by allowing an aqueous 2.5 percent solution of quinine hydrobromide, treated with half its volume of acetone and made alkaline to very slight opalescence with ammonia, to evaporate spontaneously in a crystallizing dish covered with a funnel.—Bull. Soc. Chem. de France, April 20, 1912, 398.

Strychnine: Modification of the B. P. Test for Brucine.—In the British, and in most of the other pharmacopœias, the test for brucine in strychnine is to pour nitric acid on the crystals and to observe whether any red coloration is produced. D. B. Dott says that this test is unsatisfactory inasmuch as it is difficult to properly observe or define a transient tint which quickly changes to a darker color, caused by the rapid action of the strong nitric acid on the strychnine, and suggests the following modification of the test: Dissolve 0.05 gm. of the powdered strychnine in 4 cc. of a mixture of equal volumes of nitric acid and water, at the ordinary temperature; the color of the solution, after five minutes, should be purely yellow, showing no red or orange tinge.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ. and Pharmacist, Aug. 3, 1912, 144.

Santonin: Manufacture in Turkestan.—From an interesting article on the production of santonin in Turkestan, which appears in "Vestnik finansov" (1912, No. 88), it appears that the manufacture of this important vermifuge is confined practically to Turkestan, where extensive manufacturing plants have been established since the Russians have taken possession; and since the habitat of the plant (*Artemisia cina*), from which it is prepared, is restricted to a small territory of the earth's surface, and confined to Russian Turkestan, the supply of material has become a Russian monopoly and, in consequence, that of the product also. While the plant grows only within narrow limits on the left bank of the Syr-Darja it grows profusely on the right bank of this river, extending over the entire plain, between the large and small streams, up to the Altai range of mountains. Most of this land, which is inhabited

by the nomad Kirgisi, has been acquired by the Russian crown and is rented out on certain terms covering the exclusive right to collect the flowers. During the harvest of the flowers, which is confined to a very brief period (usually between the 15th or 20th of August, and the 1st or 5th of September), the manufacturers open storage-centers, for the reception of the crop, which are again closed at the end of the harvest, and the collection requires the watchful care of a large number of employes, since the flower must be collected at the proper period of development—the santonin-content being greatest when just opening. The average yield of flowers is estimated at 50 to 60 thousand puds (1 pud = 16.375 kilograms, Rep.), but in some years is as low as 40,000 puds, of which a large portion is exported. The manufacture begins immediately after the harvest, the average yield of santonin (more or less crude) being 1 part from 150 parts of flowers. The produce, which is mainly exported to Germany, is about 400 puds, but occasionally has been as high as 1500 puds. The refuse material (dregs) is used as fuel after drying and forming into "briquets."—Pharm. Ztg., LVII (1912), No. 77, 778.

Strophanthus Glucoside: Comparative Investigation.—A. Heffter and F. Sachs have determined by a comprehensive investigation of the strophanthus glucosides that the amorphous strophanthin of *Strophanthus hispidus* closely resembles the strophanthin of *S. kombe*, both in its physiological activity and in chemical character. Besides this amorphous strophanthin, however, the *Kombé* seeds contain a crystalline strophanthin. While the gratus-strophanthin of Thoms is only slightly bitter, the others mentioned are all markedly bitter. Crystalline kombé-strophanthin alone has the property, in a slight degree, of disintegrating the red blood corpuscles. Its toxicity on rabbits is very close to that of the amorphous glucoside, and less than that of gratus-strophanthin, but there appears to be very little difference in its action on the human subject from the amorphous glucoside with which it is associated.—Pharm. Journ. and Pharmacist, Aug. 24, 1912, 271.

Proteolytic Ferments: Action of Light.—The action of both visible and ultra-violet rays of light has been tried by H. Agulhon on yeast-sucrase, maltamylase, pancreatic

amylase, emulsin, pepsin, rennet-ferment, catalase, tyrosinase, and malt peroxidase. He finds that ultra-violet rays not only destroy micro-organisms, but they rapidly destroy all the ferments named, provided these are present in media which are permeable to the rays. Sucrase, laccase, and tyrosinase are only attacked by visible light rays in presence of active oxygen, and are less rapidly destroyed by ultra-violet rays in the absence of that element. Emulsin and catalase are decomposed *in vacuo*, by all light rays, but less actively without than in the presence of oxygen. Rennet-ferment is unaffected by ordinary light, but is destroyed by ultra-violet rays with equal rapidity in presence of oxygen and *in vacuo*.—*Annales de Pasteur*, 26 (1912), 38.

Amygdonitrile Glucoside: Isolation from Leaves of Photinia Serrulata.—In 1906 Guignard examined the leaves and other parts of *Photinia serrulata* with reference to the considerable amounts of hydrocyanic acid they yield on distillation. H. Herissey has now isolated the cyanogenetic glucoside by submitting the fresh leaves to the process of Bourquelot. It proves to be amygdonitrile glucoside. This is the third instance that this glucoside has been found in plants—first, by the author in *Cerasus padus*; then by Power and Moore in *Prunus serotina*; and, thirdly, as above. Possibly prulaurasin or some other glucosides are present as well.—*Journ. de Pharm. et Chem.*, 1912 (5), 574.

Emulsin: Reversible Reaction.—Seven years ago Visser found that when emulsin was allowed to react, in an aqueous medium, with saligenin and glucose, a product was formed which was regarded as almost certainly salicin, although its identity was not fully established. E. Bourquelot and M. Bridel, having now shown that emulsin, in the presence of alcohol 85 percent. is capable of hydrolizing 54 percent. of any salicin in solution, it was considered probable that the reverse action in the same medium would give a better yield than water, as in Visser's experiment. This was found to be a fact, and the optical deviation attained in fourteen days was in accordance with theory. On removing the alcohol, and evaporating the residue with water-saturated acetic ether, a method which was found capable of removing salicin from a mixture of saligenin and glucose, a gluco-

side was dissolved out. It was not salicin, however. It was a transparent amorphous hard mass, without a trace of crystalline structure, very soluble in water; $n_D^{20} = 1.502$; not reducing Fehling's reagent; rapidly hydrolyzed by emulsin without regenerating saligenin. It has not yet been definitely identified, but the above characters are those of Koenig and Knorr's B-ethyl glucoside. In any case, it is established that emulsin is capable of a reversible activity, and to a greater degree than has hitherto been considered possible.—*Compt. rend.*, 154 (1912), 1375.

Volatile Oils: Variability of Optical Rotation.—Rob. Frey contributes some interesting memoranda concerning the variability of the optical rotation of volatile oils mentioned in the G. P. V., among the constants serving for their valuation. The optical rotation is influenced by a variety of causes, such as the conditions of development of the plant, the method of production, fractionation, age, etc., so that some of the oils may vary within considerable limits from dextro- to laevorotation. In the case of turpentine oils, for example this variation may be from 15° to 40° , a difference of 55° in the specific rotation. An examination of a number of conifer-oils in a 94.7 mm. tube showed the following average optical rotatory constants: Ol. terebinthin. rectificat., 2.5° ; ol. terebinthin. Gallic, -6.5° ; Ol. Pini (Kienöl), 14.9° ; Ol. Pini silvestris (pine-needle oil), -19.2° ; Ol. Pini pumilionis, -7.2° . By judicious admixture it becomes quite possible to make an optically inactive product from dextro and laevorotatory turpentine oils, or to produce mixtures having the desired intermediate degrees of optical rotation. Again, it has been shown that by fractionation, American turpentine oil will yield fractions having according to the temperature of distillations the specific rotations of 14.61° , -0.36° and -13.17° , while similarly French oil of turpentine yields fractions of -42.2° and 18.34° , and the oils from the oleoresins of pine and of fir yield fractions between 155° and 160° , showing the rotations of 20.2° and -7.9° , respectively.—*Pharm. Ztg.*, LVII (1912), No. 78, 785.

Cubebis: Method of Identification.—Confirming the observation of Umney and Potter that cubebis offered on the market, particularly such imported via London, have recently

been frequently sophisticated with different sorts of pepper-fruits, Caeser & Loretz state that they have recently met with a consignment containing scarcely any genuine cubebs but large quantities of *Piper nigrum*. They confirm furthermore the statement of Unney and Potter that the fruits used for sophisticating cubebs are difficult to distinguish in their externals from the genuine fruits, but they have resorted with advantage to the sulphuric acid test, which is carried out as follows: The fruit is triturated in a small mortar to fine powder, the powder transferred to a small, plain filter (4 cm. diameter), and 1 or 2 cc. of ether is poured upon the powder. The filtrate is collected in a small porcelain dish, allowed to evaporate spontaneously, 1 or 2 drops of sulphuric acid are added to the residue and the two are stirred together with a glass rod. A handsome purple-red color is developed and this is intensified if 1 or 2 cc. of ether is poured upon it and evaporated by moving the dish to and fro on the hand. False cubebs subjected to this test give a dirty brown color. The test should be carried out simultaneously with several fruits of different appearance.—*Pharm. Ztg.*, LVII (1912), No. 84, 845.

Medicinal Mixtures: Potential Increase of Activity.—Dr. J. Abelin observes that the pharmacological activity of medicinal mixtures has during recent years formed the frequent subject of scientific study. He says it is a well-recognized fact that two medicaments, administered together, will under circumstances exert a much more potent effect than either of them by itself in corresponding doses. In surgical practice, also, it has been experienced that by the judicious combination of two narcotics a better and more lasting narcosis is produced than is possible by the use of one of the narcotics by itself. Moreover, a dose of a medicament which by itself is ineffective, may acquire pronounced potency by the addition of insignificant quantities of a second substance which, given by itself, would be without any effect whatever. Another important observation is the increased potency acquired by a medicament when it is administered in broken doses, as for example when morphine is given in small, subdivided doses at short intervals, by which a stronger and more lasting narcosis is produced than when the entire dose is given at

once. The author gives numerous examples, quoting the experience of a number of investigators—Schneiderlin, Krawkow, Führer, Bürgi, Blessing, and others—and sums up the results of his review in the following sentences:

Increased potency of activity may be expected by the combination of two medicaments: (1) When both medicaments belong to different pharmacologic-chemical groups; (2) when to the dose of a medicament, ineffective by itself, a very small quantity of some other corresponding medicament is added; and (3) when the stated dose of a medicament is given in divided portions at short intervals.—*Pharm. Ztg.*, LVII (1912), No. 79, 796.

Fruit Juices: Utilization of Garden Fruits to Make Palatable Wines.—P. Carles directs attention to the statement that during ordinary seasons in France 20,000,000 kilos of cherries are absolutely wasted, and in good years as much as 50,000,000 kilos. This loss is mainly due to difficulties of transport between rural districts and towns. If this fruit could be fermented, a wholesome beverage might be obtained. The reason that palatable "Wines" cannot be made from cherries and other garden fruits is stated to be due to their deficiency in tartaric acid. The author says if this is added in such proportions as to bring the total acidity of the juice to the equivalent of 7 to 9 gm. of tartaric acid to the liter, fermentation will proceed normally, regularly, and completely, as in the case of wine made from grapes. All that is necessary is a preliminary titration of the fruit juice and the addition of the requisite amount of acid. As fermentation proceeds, the potash salts present in the juice, having combined with the acid to form potassium acid tartrate, are precipitated precisely as occurs when grape juice is fermented.—*Report de Pharm.*, 24 (1912), 241.

Syrup of Raspberry: Amyl-Alcohol Test for Tar Colors.—E. Schroedter's experience supports the statement that the G. P. V. test for the absence of tar colors in syrup of raspberry is liable to be misleading, since amylalcohol is apt to take up the natural coloring matter of the fruit, particularly when the berries have ripened well and have a deep red color. It is true that the color so imparted to the alcohol is comparatively faint, pale

rose-red, but its occurrence may be misinterpreted unless it is distinctly understood that the amylalcohol separating slowly after vigorous shaking with the syrup must be decidedly red to indicate the presence of a tannin. A simple and reliable test for the latter consists in dyeing a woolen thread, previously saturated with sodium acetate solution, in the syrup.—*Pharm. Ztg.*, LVII (1912), No. 72, 728.

Liq. Kali Arsenicosi, G. P. I.: Advantage of Using Monocarbonate in Place of Bicarbonate of Potassium.—Héro Krüger observes that the combination of arsenous acid and potassium bicarbonate is not effected at the temperature of boiling water, a temperature of 102° being required, and that by the foaming produced by the evolution of CO₂ portions of the arsenous acid are carried to the upper portions of the reagent glass, where it adheres persistently and is difficult to remove. If the bicarbonate (1.0) is replaced by monocarbonate (0.7), the required temperature is quickly reached and the frothing is practically avoided.—*Pharm. Ztg.*, LVIII (1912), No. 78, 786.

Cellophan: A New Cellulose Product for Impermeable Paper.—In "Les Nouv. Remèdes" (No. 15, 1912), a new cellulose product is described under the name of "Cellophan," which is prepared in the bleachery at Thaon-Vosges by dissolving cellulose, reprecipitating it, and then subjecting the precipitate to treatment similar to that employed in paper-making, by which it is obtained in form of transparent and very stable sheets of 14/100 mm. thickness and upward. These sheets are odorless and tasteless, swell up when immersed in water, and burn like ordinary paper without exploding. It is not affected by alcohol, ether, chloroform, iodine, or volatile and fixed oils, but is attacked somewhat by alkalis. It is superior to parchment paper as a filtering medium for bacteria and as a dialyzing membrane. By boiling water, hydrogen dioxide, and corrosive sublimate it may be sterilized, and thus becomes useful as a substitute for the more expensive materials usually employed for the protection of surgical appli-

cations, and bandages, as well as a protective wrapper, replacing economically gauze, caoutchouc, parchment paper, and tin-foil usually employed for medicines, food products, etc., or for one or the other of these purposes. The new material may be colored, pressed into any desirable shape, and readily receives imprints.—*Pharm. Ztg.*, LVII (1912), No. 75, 758.

PROGRESS OF THE METRIC SYSTEM.

M. Charles Edouard Guillaume, Director of the International Bureau of Weights and Measures, recently communicated an interesting paper on the "Evolution of the Metric System," to the Société de Physique. He noted that the system is now obligatory in the Argentine, Austria-Hungary, Belgium, Brazil, Bulgaria, Chili, Columbia, Cuba, Denmark, France, Germany, Guatemala, Holland, Italy, Luxemburg, Mexico, Montenegro, Norway, Peru, Portugal, Roumania, Servia, Spain, Sweden, Uruguay, and the Central Mexican republics. In Bolivia, Egypt, Great Britain and Ireland, Greece, Japan, Paraguay, Russia, Siam, Turkey, Venezuela, and the United States it is optional only. But it appears probable that Greece and Siam will shortly declare its use obligatory, and in the United States legal units of existing weights and measures are defined by their relation to metric units, and not by the British Imperial standards. The fundamental units defined by the 1889 Convention, at which twenty states were officially represented, were those of length, time and mass. The two former are clear enough, but the kilogram is frequently supposed to be a unit of weight, whereas ever since its introduction in 1799 it has never been really considered anything but a mass unit. In view of the feeble but appreciable difference between the volume of a kilogram of water and a cubic decimetre, a distinction is made between the latter and the litre. A litre, according to the most up-to-date authorities, contains 27/1,000,000 (twenty-seven millionths) more than a cubic decimetre.—*The Chemist and Druggist*.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

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One prize to the candidate making the highest general average in all branches. Offered by the South Dakota Pharmaceutical Association.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

SALE OF POISON—EVIDENCE.—Action was brought against a druggist for the death of a boy, which it was claimed resulted from the substitution of bichloride of mercury for calomel. The defendant claimed that the boy died of typhoid fever. In the trial court verdict and judgment were given for the defendant. On appeal it was held that an instruction that if the boy had typhoid fever, but the jury believed that bichloride of mercury was administered to him, and that the poison caused or brought on his death, they should find for the plaintiff, substantially covered a request by the plaintiff to charge that, if the boy died of the combined effects of the disease and the poison, the plaintiff was entitled to recover. A physician testified that bichloride of mercury given to a typhoid patient would retard his recovery,

and that in his opinion $2\frac{1}{2}$ grains of that drug given to a typhoid patient would cause gastritis and gastric trouble, which would weaken the patient and cause symptoms of poison if taken inwardly. It was held that an answer to the direct question, "Would it aid the disease in killing the patient?" was properly excluded. The correct line of testimony was to develop the effect of the poison upon one who had typhoid fever. A pharmacist was permitted to bring into court samples of calomel and bichloride of mercury together with the reagent potassium iodide. An objection that the bichloride of mercury was in crystal form, and not in the powdered form like that sold by the druggist, and that the pharmacist was allowed to pulverize it before applying the reagent, was not sustained. Judgment for the defendant was affirmed.

Mann's Adm. v. Reynolds, Kentucky Court of Appeals, 150 S. W. 329.

SALES OF POISONS—INDICTMENT.—The West Virginia statute, Acts of 1911, chapter 16, makes it a felony to sell cocaine except on the prescription of a licensed physician. It was held that an indictment for selling cocaine under the act was defective because it did not aver that the sale was without the prescription of a physician. The defendant, it was said, may have had a prescription authorizing sale. The offense is not merely selling, but selling without a prescription; therefore the exception was a part of the definition of the crime and must be negatived.

State v. Weir, West Virginia Supreme Court of Appeals, 76 S. E. 138.

MANUFACTURING CHEMIST'S LIABILITY.—Action was brought against a firm of manufacturing chemists for the death of two horses alleged to have been caused by an intravenous injection of a solution of nuclein manufactured by the defendant, and prescribed by a veterinary surgeon employed by the plaintiff. There was nothing more to connect the defendant with the loss than an advertising circular of the remedy addressed to veterinarians, stating that it was intended especially for hypodermic use, and referring generally to a magazine article written by a reputable veterinarian describing his use of the preparation intravenously as well as hypodermically. An offer to show that the defendant subsequently changed the formula

by reducing the percentage of nuclein contained therein was held properly rejected.

Young v. Parke, Davis & Co., 49 Va. Superior Court, 29.

PURE FOOD LAW—CONFECTIONERY A FOOD.—In a prosecution for selling confectionery containing sulphur dioxide in violation of the Pennsylvania Pure Food Law, Act of May 13, (P. L. 520) it was held that the title of the act, "An act relating to food, defining food, providing for the protection of the public health and the prevention of fraud and deception by prohibiting the manufacture or sale, the offering for sale or exposing for sale, or having in possession with intent to sell of adulterated, misbranded or deleterious foods," etc., is sufficiently comprehensive to give notice of the prohibition against adding sulphur dioxide to confectionery. The word "food," it was said, is a general term, and applies to all that is eaten for the nourishment of the body, including any substance that is taken into the body which serves, through organic action, to build up normal structures or supply the waste of tissue; it includes candy, sweetmeats, preserves and other confectionery. The fact that the statute provides that sulphur dioxide may be used in quantities not detrimental to health in the preparation of dried fruits and molasses was held not to render it a violation of the Constitution as an improper discrimination. Nor is the act unconstitutional because it relieves retail dealers from prosecution where they sell under a guaranty signed by the manufacturer or wholesale dealer. A conviction may be obtained under the statute where it appears that the sulphur dioxide was added to gelatin in the bleaching process, and the gelatin was then added to other constituents to compose the confectionery which the defendant sold.

Commonwealth v. Pflaum, Pennsylvania Supreme Court, 84 Atl. 842.

MISBRANDING CHAMPAGNE.—In a prosecution for violating the Pure Food and Drugs Act, it was held that an indictment for misbranding champagne in violation of the Act was not invalid because of failure to allege a preliminary investigation by an officer of the Department of Agriculture, a notice to the defendants of their violation of the act, or that the defendants were afforded an offer to present evidence and be heard. Where

there was evidence tending to show that the defendants sold in interstate commerce a domestic wine, artificially carbonated, under a label "Extra Dry Champagne," with words in French and a design calculated to induce a purchaser to believe he was buying a foreign and not a domestic product, it was held that they were guilty of misbranding in violation of the act.

Schraubstadter v. United States, Circuit Court of Appeals, 199 Fed. 568

OLEOMARGARINE — LICENSE TAX—"MANUFACTURER."—In a prosecution under the Oleomargarine Act of 1886 for manufacturing oleomargarine without having paid the special tax therefor, it was held that the essential elements of the offense are the engaging in the business of manufacturing oleomargarine, the producing of such substance, and the attempt to defraud the United States, and an indictment alleging that defendants on a certain date, being persons engaged in carrying on the business of a manufacturer of colored oleomargarine at a specified place, did knowingly, etc., attempt to defraud the United States of a tax imposed on 120 pounds of colored oleomargarine, then and there produced by them, etc., was sufficient, without alleging its sale or removal for consumption. The statute does not declare it an offense to commit the fraud in any particular way, hence an indictment does not require to charge the manner in which the attempt was made. The statute was held to be applicable to one who did not manufacture white oleomargarine, and therefore was not a manufacturer within the definition contained in the original act, but who mixed white oleomargarine with artificial coloration so as to make it look like butter and thereby became a "manufacturer" within the definition as extended by the Act of May 9, 1902.

May v. U. S., Circuit Court of Appeals, 199 Fed. 42.

RESCISSION OF ORDER.—In an action for an alleged breach of contract for the sale of soda fountain, an order was given to the traveling salesman of the defendant, with a deposit of \$25.00 for a fountain at the price of \$300.00. The order expressly provided that it was subject to the approval of the home office. On receipt of it the defendant refused to accept it for several reasons, among others, that the price should have

been \$350.00. The plaintiff refused to sign an order submitted to him at \$350.00 and asked for the return of his deposit, which was made. Judgment for the plaintiff was reversed for the following reasons. The order providing in express terms that it was subject to the approval of the home office, it did not become a binding contract until it was approved and accepted. Where the person making such an order, upon being notified of its non-acceptance, demands and receives a repayment of the money forwarded therewith, he thereby rescinds his order, and cannot maintain an action thereon for damages for its non-acceptance.

Crowder v. Tolerton & Warfield Co., Nebraska Supreme Court, 138 U. W., 151.

VERBAL REPRESENTATIONS EXCLUDED.—The purchaser of a soda fountain brought an action for breach of warranty after having kept the fountain for several months. He claimed that it did not come up to specifications, and charged that the carbonator was not of the kind described, and that the trimmings of the counter were white instead of green. The written contract contained the stipulation, "the sole authorized business of our agents is to solicit contracts on this printed form, and no agreement or representation will be recognized by us unless it is written hereon." It appeared that the purchaser rested his principal grievance, not on the ground that the carbonator differed from the specifications of the contract, but that it did not come up to certain verbal assurances of the seller's agent. It was held that such verbal assurances constituted no part of the contract, and could not be considered in an action for its breach. On the question of the trimmings, the evidence as to pecuniary injury was held too indefinite to be made the basis of any substantial recovery.

Simpson v. R. M. Green & Sons, North Carolina Supreme Court, 76 S. E. 237.

INTOXICATING LIQUORS—MANAGING DIRECTOR'S LIABILITY.—In a prosecution for maintaining a place where intoxicating liquors were illegally sold, bartered or given away, it was held that the fact that the defendant was a member of a corporation owning and operating certain drug stores where liquor was illegally sold, and that he assisted in directing the policies of each store, in naming their clerks and assistants and received a share of

the profits therefrom made him subject to prosecution and conviction.

Rigrish v. State, Indiana Supreme Court, 99 U. E. 786.

INTOXICATING LIQUORS — EVIDENCE.—The South Dakota Political Code §2860, as amended, provides that it shall be unlawful for any registered pharmacist to sell or give away any intoxicating liquors whatever to be used as a beverage or drunk on the premises, and that any registered pharmacist who shall allow intoxicating liquors to be drunk upon the premises or in any room adjoining the premises, shall be fined on conviction. In a prosecution for violation of the statute it is held that the statute forbids the selling or giving of intoxicating liquors to be drunk as a beverage anywhere by a registered pharmacist, and also the selling or giving of such liquors to be drunk on the premises, as a beverage or otherwise. Under an information charging an illegal sale of intoxicating liquors to several persons jointly, the defendant, it was held, cannot be convicted of an illegal sale to but one of the persons named. A witness testified positively on his own personal knowledge to purchasing beer from the defendant, a registered pharmacist, to be drunk on the premises. The witness was contradicted by two other witnesses for the state, and his credibility was attacked by three apparently disinterested citizens. It was held that, while the appeal court might not find upon the evidence that the liquor was beer, it could not disturb a verdict of guilty, the jury being at liberty to believe the witness, notwithstanding his contradiction and impeachment.

State v. Julius, South Dakota Supreme Court, 137 U. W., 590.

EJECTING A TENANT BY MEANS OF FORMALDEHYDE.—After an abortive attempt had been made by a landlord to regain possession of leased premises, the lessee, with a number of his employes, remained in the building during the night. In order to eject them the landlord caused a hole to be bored in the wall of the room where the lessee and his employes were dozing, and with the aid of a bicycle pump, injected about two quarts of liquid formaldehyde into the room. In an action for injuries the lessee claimed that, as a result of inhaling the poisonous gas, he became afflicted with an acute inflammation of the

throat and eyes, which after some days assumed a chronic condition. It was held that the landlord was liable for all damages resulting from his act.

Saros v. Avenue Theatre Co., Michigan Supreme Court, 137 U. W. 559.

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ABSTRACT OF U. S. TREASURY DECISIONS.

(T. D. 32950.) DRIED MINT.—In view of the decisions of the Board of United States General Appraisers, reported in G. A. 4292 (T. D. 20208), G. A. 5266 (T. A. 24173), Abstracts 23177 and 23178 (T. D. 30585), and Abstract 26276 (T. D. 31813), wherein it was held that crude thyme, marjoram and savory were entitled to admission free of duty as crude drugs under paragraph 559 of the tariff act, the treasury department is of opinion that dried mint in bottles is also entitled to admission free of duty as a crude drug under the said paragraph, the bottles being dutiable at the appropriate rate provided in paragraph 97 of the said act.

(T. D. 32963.) FRUIT ETHERS.—Merchandise known as "Sinalco Seele," made by a secret process, and used as a base for the manufacture of non-alcoholic drinks was classified for dutiable purposes as "fruit ethers, oils or essences" under paragraph 21 of the tariff act of 1909. The importers claimed that it should be classified as a "non-enumerated manufactured article" under paragraph 480 of the act. The Government claimed it to be dutiable as an alcoholic compound under paragraph 2 of the act. It was held that, the merchandise being, as imported, composed of 17.6 percent. of alcohol and 1.7 percent. of extract, the balance water, and the extract having a fruit aroma, it fell within paragraph 2 as an alcoholic compound or paragraph 3 as a chemical compound or mixture containing alcohol.—*U. S. vs. Chattanooga Brewing Co.*

(T. D. 1809.) ADULTERATED BUTTER.—The Internal Revenue office does not accept as a precedent the case of *United States v. 11,150 pounds of butter, Milton Dairy Co.*, 195 Fed. 657. The office will continue to assess the civil liability in every case where the moisture content is 16 percent. or over; and its purposes to proceed against the manufacturer of butter which contains 16 percent. or more

of moisture for his failure to label the butter properly marked, branded and sealed. Therefore it is sold or offered for sale. This will bring up the direct question of fact in each case and, even under the decision of the court in the Milton case, that 16 percent. of moisture is not adulteration as a matter of law. (It being well known that in most cases of adulterated butter the moisture content runs up to 18 and 19 percent.), there will be a direct issue of fact to be passed on by a jury.

(T. D. 1810.) ADULTERATED BUTTER.—METHOD OF SAMPLING.—The Internal Revenue Office has issued instructions that before sampling any suspected adulterated butter, officers should notify the manufacturer, owner, or holder of the proposed sampling, and accord to such person or representative the privilege of being present and securing similar samples at the same time, if so desired.

(T. D. 32975.) IMPORTATION OF WHITE PHOSPHOROUS MATCHES PROHIBITED.—The importation into the United States, on and after January 1, 1913, and the exportation after January 1, 1914, of white phosphorous matches is prohibited.

(T. D. 32891.) DRAWBACK ON SACCHARIN.—Drawback was allowed on saccharin manufactured by Fries Bros. of New York, from imported orthotoluol-sulfamid and potassium permanganate, proportioned to the relative values of the saccharin and various by-products obtained in the manufacture thereof.

(T. D. 32888.) DRAWBACK ON BENZOIN AND ALMOND LOTION.—T. D. 32180 providing for an allowance of drawback on benzoin and almond lotion manufactured by the Andrew Jergens Co. of Cincinnati, Ohio, with the use of domestic tax-paid alcohol was extended to cover sample bottles of the preparation.

(T. D. 32932.) DRAWBACK ON FLUIDEXTRACTS.—Drawback was allowed on fluidextracts, tinctures, and other pharmaceutical preparations manufactured by H. K. Mulford & Co. of New York, with the use of domestic tax-paid alcohol, the quantity of alcohol to be taken as a basis for payment of drawback to equal that actually contained in the exported articles without allowance for waste.

(T. D. 32944.) DRAWBACK ON SINKINA.—Drawback was allowed on Sinkina, manufactured by the Metropolitan Pharmaceutical Co. of New York, with the use of domestic tax-paid alcohol. In liquidation, the quantity

of domestic tax-paid alcohol which may be taken as the basis for payment of drawback may equal the quantity actually appearing in the preparation as exported, provided that in no case shall it exceed 12 percent. in volume of alcohol of 190 degrees proof.

(T. D. 32892.) **DRAWBACK ON CHEWING GUM.**—Drawback was allowed on "U-all-no mint chewing gum," manufactured by the Manufacturing Co. of America, Philadelphia, from refined sugar obtained from imported raw sugar, chicle and essence of mint.

The Bulletin Board



GEORGE M. BERINGER.

George Mahlon Beringer, president-elect for 1913-14, of the American Pharmaceutical Association, was born in the old district of Southwark of Philadelphia on February 3, 1860. He obtained his early education in the public schools of that city, graduating from the Central High School with the degree of A. B., and a standing meriting the award of a teacher's certificate. He developed special fondness for the study of chemistry and this

led him to enter the employ of the firm of Bullock & Crenshaw on March 1, 1876, where he made the acquaintance of the late Thomas S. Wiegand, editor of the later editions of Parrish's Pharmacy, who assisted and guided him in his early studies in pharmacy. The strong friendship then established lasted until the decease of Mr. Wiegand.

In 1878, Mr. Beringer matriculated as a student in the Philadelphia College of Pharmacy, graduating in 1880, the subject of his thesis being "Caffeina."

Subsequently he engaged in laboratory work with Bullock & Crenshaw and later became manager of their retail department as well as an advisory and research chemist. Being employed during the day, he was unable to enter the Analytical Laboratory of the Philadelphia College of Pharmacy, and took, instead, an evening course with Dr. Henry Leffmann, the well known chemical expert.

At this time he became active in the organization of the Lyceum of the Ebenezer M. E. Church of Philadelphia, contributing literary and scientific essays and participating in debates, a training which proved to be of much value to him in his subsequent work.

In 1882 Mr. Beringer was married to Miss Estella F. Wolfe, of Camden, N. J., and removed to that city. In order to carry out more fully his experimental and research work, he fitted up a small laboratory at his residence, and here in the early hours of the morning and frequently the late hours of the night, he made his investigations.

After graduation from the Philadelphia College of Pharmacy, he continued his studies, chiefly along botanical and chemical lines, and in these he has been largely self-taught. Summer vacations were utilized for botanical excursions, and his herbarium is a good representation of local flora. He was one of the founders of the Philadelphia Botanical Club, and was its president for several years.

In 1892 he was elected director of the Microscopical Laboratory of the Alumni Association of the Philadelphia College of Pharmacy, and performed the duties of this position until the association turned the laboratory over to the Philadelphia College of Pharmacy in 1894.

Mr. Beringer remained with Bullock & Crenshaw until June 1, 1892, when he purchased the retail drug store of the late

Albert P. Brown at the northeast corner of Fifth and Federal streets, Camden. In 1898, he rebuilt, remodeling and refitting the store to meet the demands of a rapidly growing manufacturing and physicians' supply business, as well as an extensive retail drug trade. He specialized in urine analyses for physicians and has made many hundreds of analyses; also a number of toxicological investigations for the police authorities in cases of suspected poisoning in Camden, Burlington and Cape May counties.

The degree of Ph. M., *honoris causa*, was conferred upon him by his Alma Mater in 1903. He is a life member of the Philadelphia College of Pharmacy and the Chairman of its Board of Trustees, as well as the Chairman of the Committee on Instruction and a member of other committees. He is a life member of the Academy of National Sciences of Philadelphia, and its Botanical Section; of the Philadelphia Botanical Club and the American Chemical Society. He became a member of the American Pharmaceutical Association in 1893 and is a most active and loyal member. He is chairman of the Committee on Unofficial Standards, and a member of the Committee on Publication, the Committee on National Formulary, and the Pharmaceutical Syllabus Committee. He is a "live wire," as the late C. S. N. Hallberg would say, and his work on behalf of the Association has been most valuable. He is a member of the New Jersey Pharmaceutical Association and was its President of 1904-05. He is, also, an honorary member of the Pennsylvania and Maryland Pharmaceutical Associations. Lastly, he is an exceedingly active member of the Committee on Revision of the U. S. Pharmacopœia, and Chairman of the Sub-committee on Fluid and Solid Extracts.

He is broad-gauged, interesting himself in public affairs, as well as those of his own calling. He places high value upon building and loan association work as a stimulus to thrift. The Guarantee Building and Loan Association of Camden resulted from a meeting held at his home in August, 1886, and from its inception he has been its secretary. He takes a deep interest in legislative affairs generally, and has been a leading spirit in a number of movements in his city for the uplift of civic conditions.

Mr. Beringer is a man of action. He is a close student of the progress of pharmacy

and allied sciences, and his contributions to pharmaceutical literature have been many and valuable. He loves work—he revels in work, or as a fellow-member of his on a committee of the American Pharmaceutical Association once said of him to the writer—"He is a fiend for work," and his capacity seems unlimited. Moreover, with his love of work, he has the ability of inspiring enthusiasm in others; the committees of which he is the chairman "get things done." His work is marked by unusual ability, thoroughness and practicality. He is purposeful and resourceful. He wastes no time in unnecessary details. He gets "at the core of things," picking "kernels of truth from hulls of sham" and yet covers his subjects fully.

Personally, Mr. Beringer is genial, warm-hearted and every ready and willing to help others, and to do his full duty in all movements for the advancement of pharmacy. His critical faculty is highly developed, but he is an unsparing critic of himself, as well as others, and is fair and reasonable with his opponents. His conclusions are carefully made, but once made they are firmly maintained, and generally prove to be correct.

His many friends will rejoice in the honor that has come to him, in his election as President of the American Pharmaceutical Association, and will wish him many years of happiness, usefulness and prosperity.

J. W. E.



CARL L. ALSBERG.

THE NEW CHIEF OF THE BUREAU OF
CHEMISTRY.

Dr. Alsberg is the son of a chemist and grew up in an atmosphere of chemistry. He was born in New York City April 2, 1877, and his early education was had in private schools in New York City, and in 1892 he entered Columbia University, receiving the A. B. degree in 1896. He then entered the College of Physicians and Surgeons of Columbia University, receiving his M. D. degree in 1900, and the degree of A. M. from the University during the same year. He then went to Germany, and during the period from 1900 to 1903 he took graduated work in the University of Strassburg along the lines of pharmacology, physiological chemistry, and internal medicine. For two months in the spring of 1901 he was a research worker at the German Imperial Institut for Experi-

mental Therapeutics at Frankfort-am-Main, and also at the Senckenbergisches Institut. He took graduate work at the University Summer School in Berlin during the summer recess of 1901, and from June, 1903, to January, 1904, he was a graduate student in chemistry at the University of Berlin. While in



DR. CARL L. ALSBERG

Germany, Doctor Alsberg worked under Schmiedeberg, who is recognized as the leading chemical pharmacologist in the world.

In September, 1902, Doctor Alsberg was appointed Assistant in Physiological Chemistry at Harvard Medical School, with leave of absence until January, 1903. He was granted leave from June, 1903, to January, 1904, to go abroad for purposes of study. In June, 1905, he was advanced to instructor in biological chemistry at the Harvard Medical School and jointly with a colleague of the same rank put in charge of the Department of Biological Chemistry. The next year he was advanced to faculty instructor and made sole head of the Department, which position he retained until his resignation in October, 1908, to accept a position in the Bureau of Plant Industry of the United States Department of Agriculture. He was appointed in

that Bureau after a long search for a man who could combine the science of pathology, physiology, and chemistry in such a way as to conduct a number of special investigations upon which work he has been engaged up to the present time.

Dr. Alsberg has acquired an international reputation as an authority on the biological phases of chemistry. He has been Chairman of the New Biochemical Section of the American Chemical Society—the largest and most influential scientific society in America—since its formation. At the St. Louis Exposition he was Secretary of the Section of Physiological Chemistry of the International Congress of Arts and Sciences. His publications in the field of biochemistry have been numerous. Since being in the service of the Department of Agriculture, Doctor Alsberg has received a number of flattering offers to take up work along the lines of pharmacology and chemistry from colleges and other institutions.



MORE ABOUT THE PROPAGANDA.

In an article by Dr. Fantus printed in the November JOURNAL he states that some doctors object to druggists giving gratuitous therapeutical information to physicians in the U. S. P. and N. F. propaganda work. He further states that some of the therapeutic ideas advanced by pharmacists "though taken from text books" are antiquated, etc.

How deplorable that whatever good is intended in a movement will be misconstrued! May I ask the doctor a few questions:

Are all the text books obsolete?

Has he consulted some of the living writers of text books?

Is there anything good in text books?

Are the tried remedies (though antiquated) to be discarded; e. g., are senna, aloes, rhubarb, podophyllum, magnesium sulphate, etc., to be replaced by Smith's Laxine, Cathartazine, General Purpose Tablets, etc.?

Is sufficient stress laid upon the teaching of therapeutics and materia medica in every medical college?

Would Professor Lister turn over in his grave if he knew how he is being immortalized by the Listerine Manufacturing Company?

What were the primary objects of the A. M. A. in promulgating the work of its Coun-

cil on Pharmacy and its Chemical Laboratory?

Has their work brought results?

The doctor states truly: "The better educated the doctor the less will he be in need of the U. S. P. and the N. F. propaganda."

What sane man will not admit this? But may I ask Dr. Fantus if he knows what per cent. of the prescriptions of five years ago proved that many prescribers were of the better educated kind? May I ask the doctor if he has ever examined a class of recent medical graduates in prescription writing?

Not wishing to take up too much space in *THE JOURNAL OF THE A. PH. A.*, I would earnestly refer the doctor to an article in the *Journal of the A. M. A.*, Sept. 30, 1911, pp. 1133-1135, entitled "Prescription Writing."

The doctor recommends that the druggist should endeavor to educate the physician in other matters, e. g., pleasant methods of administration. I agree with the doctor, but permit me to state that this subject would soon be exhausted, the capsule, cachet, pill, chocolate-coated tablet and a few elixirs will do the work. The value of the remedy is in the active ingredient, not in the taste.

The doctor continues and mentions "commercialism," "counter-prescribing," "refilling of prescriptions," and lastly, "substitution" (the war cry of the slanderer). Will the poor druggist ever hear the last of these accusations, which were borne by his competitors: (a) the dispensing physician, (b) the grasping physician, and (c) the enemies of both the physician and the druggist, the specialty manufacturers, and the synthetic grafter?

For mercy's sake, "let us have peace." The writer believes that any man who is familiar with pharmaceutical education knows well that we have men and women educated in pharmaceutical science equal to the best equipped doctors in the medical science.

These kind of pharmacists are making propaganda of the U. S. P. and N. F. preparations and are certainly ready and willing to do all in their power to assist medical men in preventing and stamping out disease, and do not consider the loss to their pocket-book, either.

Let us realize that there are good and bad druggists, good and bad doctors, but let us think only of the good ones and forget those

things in this world which belittle our fellow man.

E. A. SENNEWALD.

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SCIENTIFIC SECTION MEMBERSHIP.

While every member of the American Pharmaceutical Association may rightfully claim membership in each and every one of its several Sections, there are many who are not sufficiently interested in purely scientific pharmacy to have any desire to be actively identified with the work of the Scientific Section, and who would pay no attention whatever to any communications from the Section. To prevent undue waste of the resources of the Association, and to conserve the energies of the officers of the Section for the cultivation of only the promising part of the membership field, it is proposed that there be made up a list of active members for the Section. Now, neither the Chairman nor the Secretary are sufficiently conversant with the mental trend of the members of the Association to warrant them to presume to compile such a list; hence, they request each and every member who wishes to be considered a member of the Section to write on an ordinary postal card, "Member Scientific Section, A. Ph. A.," following this with his name and address; and then address the card to F. P. Stroup, Secy., 145 North Tenth St., Philadelphia, Pa.

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THE A. PH. A. HOME.

December 2, 1912.

Professor James H. Beal, Scio, Ohio.

My Dear Professor Beal: Your editorial in the November *JOURNAL* on the need of a building for the A. Ph. A. impressed me so much that I read it to our faculty with the result that I am authorized to write you, saying that the Buffalo College of Pharmacy subscribes \$100 toward an A. Ph. A. building for its own purposes, payable as soon as total subscriptions amounting to \$5000 are received and a call is made upon such subscribers.

We are aware that this sum is somewhat minute for the ultimate purpose, but sometimes a small beginning is sufficient to inaugurate a promising movement, and in this hope we make this proposition. Of course back of this is an appreciation of the great service that the A. Ph. A. has rendered to American pharmacy and a recognition of its need of a building of its own in which to

conduct its affairs. With personal regards,
I am, Yours very truly,

WILLIS G. GREGORY, *Dean.*

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INDIANA BOARD OF PHARMACY.

SALEM, IND., NOV. 28, 1912.

Prof. James H. Beal, Scio, Ohio.

My Dear Mr. Beal: I want to compliment you on your article in the last JOURNAL on having a home for the A. Ph. A. That is one of the best suggestions that has been made in a long time.

I should like to have a part in such a work, although, like most druggists, not in position to give a large amount. Why could we not have a fund started with that object in view? I think we could get some city to give us the ground and perhaps some help on the side.

The first time I am in Indianapolis will see what some of our druggist friends think of the proposition. Yours truly,

W. H. RUDDER.

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THE DIFFERENCE.

D. N. ROBIN, PH. G.

"Lives of great men all remind us
We can make our lives sublime,
And departing, leave behind us
Footprints on the sands of time."

At near midnight on November 12, 1912, a druggist by the name of J. Arthur Bean died from the effects of an automobile accident received some weeks earlier.

Since his death the entire pharmaceutical press has been filled with notices of his life and work, such as the following:

"It is no exaggeration to say that the death of J. Arthur Bean, of Somerville, has cast all drug-trade matters of general interest in Boston and vicinity into the background during the past month."

"Only those who have been fortunate enough to come into personal contact with him in association work can fully realize the great loss in the untimely death of J. Arthur Bean."

"I can readily understand how much you must be grieved on learning of the death of our mutual friend, Mr. J. Arthur Bean."

"Our friend has gone from us forever so far as this world is concerned, but it is not hard to believe that such men as J. Arthur Bean can never die, but the influence of his life will ever live."

These and scores of similar tributes have expressed the deep and abiding affection in which he was held by his druggist friends and associates.

Mr. Bean was only about forty years of age, yet I have known of druggists who lived to be fifty, sixty, seventy, and even ninety-three years of age, whose demise only brought forth a brief notice in their home paper, giving the dates of their births and deaths.

Why this difference?

At about the same time as Mr. Bean's death, there died another druggist whom we will call "X," since X is an unknown quantity, and the greater proportion of druggists who die annually are unknown quantities in the drug world.

When druggist X died he was about fifty-seven years old. He graduated from a college of pharmacy at about the time Mr. Bean was born. The death notice was the stereotyped one stating that he was a local druggist who conducted a drug store on Z St.

During the hour of the services over the body of Mr. Bean every pharmacy in Somerville was closed.

During the services over X's remains only his immediate family and relatives knew of it, or cared.

Mr. Bean died leaving two flourishing drug stores; he had attained many honors in his profession, and his death was the cause of much sorrow to his fellowmen.

When X died he had an interest in one of the smallest drug stores in the city in which he lived. He had never received any honors, and he "never will be missed."

What was the difference?

The one man was a doer of deeds, he recognized his obligations to his fellow-workers in pharmacy, and strove earnestly to discharge them. He gave largely of his time and money to association work, and the more he gave, the more he gained.

The other man lived for himself alone, and did not recognize that he owed the world any obligations, and consequently the world does not recognize any obligations to him. He saved his money and his time, instead of "wasting" them on association work, and the more he saved, the less he had.

Let us, then, be doers of deeds and lovers of men, so that when we die we shall have earned the tributes of our fellows and not be an unknown quantity as was druggist "X."

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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NORTHWESTERN BRANCH.

The first of a series of winter meetings of the Northwestern Branch of the American Pharmaceutical Association was held in the lower lecture room of the College of Pharmacy of the University of Minnesota, on Thursday afternoon, November 21, 1912, beginning at 2:30. The Minneapolis Retail Druggists' Association had been invited to meet with the Branch and did so, first holding a short business meeting of its own.

The new president of the Branch, Mr. Stewart Gamble, occupied the chair. After disposing of the regular routine business, the program of papers was begun. A communication from the laboratory of the American Medical Association relating particularly to phenacetine and acetphenetidin was made the basis of a discussion of proprietary substances and proprietary rights attaching to so-called patent proprietary and copyrighted remedies, and it was pointed out that when a patent on a proprietary substance expires, not only the product but the protected name of the product as well become common property.

The next paper on the program was entitled "A Report on the Denver Meeting of the A. Ph. A.," and was read by its author, Professor G. Bachman. The paper was a brief review of the activities of the Denver meeting.

Mr. Charles H. Huhn was the next speaker, taking up extemporaneously the subject, "Propaganda Work by the N. A. R. D." Mr. Huhn dilated upon the work the N. A. R. D. is doing and emphasized that by successful

propaganda work not only pharmacists are benefited, but all interests connected with pharmacy, particularly the physicians, the colleges, the wholesale trade and even public health as well.

Mr. James Baillie read the next paper entitled "A System for the Extension of Propaganda Work." Mr. Baillie is a new member of the Association and was formally introduced by the chairman to the Branch. Mr. Baillie laid especial emphasis upon the need of higher educational standards for pharmacy and pharmacists and his observations, he stated, led him to believe the prophecy to be a correct one that in the near future there will be a separation of the present activities of the pharmacists into two distinct lines. The well-trained pharmacist of today will become the professional practitioner of pharmacy who will be on an equal footing with the physician in the estimate and respect of the public. The commercial pharmacist will become the vendor of such things that do not require a high degree of professional training. Both callings will be honorable. In discussing the paper, Dean Wulling commended the high ideals expressed in it and referred to the propaganda work being done by the College of Pharmacy with the third year students of the University Medical College and with the physicians through the operation by the College of the dispensing department of the University Free Dispensary. By an arrangement effected five or six years ago with the Medical College the College of Pharmacy has since been giving regularly a short course on the Pharmacopœia to the third-year medical students. The object of this work with the medical students is to give them a comprehensive idea of the U. S. P. and N. F. and to indicate that many proprietary remedies were actually based on the U. S. P. or N. F. In this connection the Dean also referred to the very valuable research work that is being done by many manufacturing houses.

That the medical faculty has grown to realize the need of more training on the part of the medical practitioner in pharmacy and materia medica was shown by the character of the courses in materia medica and pharmacology given to the medical students by Dr. Brown. The doctor, who spoke next, stated that it was his aim to turn out medical men who could write prescriptions for U. S. P. and N. F. products.

Professor Bachman next read a paper on

the preparation of pharmaceuticals by the pharmacist. After reading the paper, Professor Bachman demonstrated the ease with which compressed tablets and tablet triturates could be quickly made by the pharmacist. The paper was illustrated by a large display of suppositories, capsules, pills (coated and uncoated), tablets, cachets, powders and other pharmaceutical preparations.

"A Difficult Prescription" was the title of the subject treated by Mr. John A. Handy. Mr. Handy is a recent addition to the faculty of the College of Pharmacy, and upon request of Branch President Gamble was introduced by Dean Wulling, who in his introduction briefly told of the development of the college and the growth of its faculty. Reference was made to the fact that not only is the student-body and the faculty growing very satisfactorily, but that the material equipment and housing of the College are going forward at a rapid rate as evidenced by the fact that the College has now at its disposal the handsome sum of \$109,000 for the remodeling and equipping of two buildings for its sole occupancy by March 1st. Mr. Handy illustrated his paper by compounding in various ways a certain difficult prescription that was prominent at a recent Board examination. He showed that unless the prescription was compounded *secundum artem* an explosion was likely to follow and did follow in one of his experiments. Mr. Hughes, who had traveled several hundred miles to attend the meeting discussed the prescription.

The last of the stated numbers on the program was an address by Dean Wulling on "An Opportunity for Northwestern Pharmacy." Two opportunities were discussed which if developed would result in the enlargement not only of Northwestern Pharmacy, but of the pharmacy of the entire country. The Dean referred to the lack of headquarters for the A. Ph. A. and suggested the advisability of offering a permanent home to the Association here in Minneapolis. The suggestion was enthusiastically received, but at the special request of the speaker no action will be taken by the Branch until a certain plan which the speaker had in mind could be developed and presented.

The second opportunity was pointed out to lie in the closer cooperation between the pharmacists of the Twin Cities and the College. An arrangement was suggested whereby the two hundred or more drug stores in the

Twin Cities would employ young men, giving them privilege to attend College during employment. In this way it was suggested the College training and the practical drug store experience could be gained concurrently. The College and about ten or a dozen pharmacists are cooperating in this way at the present time and the success which has attended this experiment should commend it to a much wider application. This plan would help out both the student and the proprietor and would result in supplying the ranks of pharmacy with superior men. Mr. S. J. Horn, who has for more than a decade now given employment to students while they attended College, spoke of the great satisfaction this arrangement gave to himself and the students.

Dr. Brown, Messrs. Upsher Smith, Robinson, Hughes, Huhn, Tupper, Rauch, Kruckeberg and others took part in the discussions.

About fifty were present. Adjourned at 5:30 p. m.

EDWIN L. NEWCOMB, Secretary.



PHILADELPHIA BRANCH.

A joint meeting of the Philadelphia Branch and its Scientific Section was held at the Engineers' Club on the evening of November 5, the officers of the Scientific Section being in charge. Paul Stewart Pittinger was elected to membership in the Branch. Dr. F. E. Stewart read a communication from General Secretary Beal urging the members to live up to the ideals of the Association, and also read a reply which he had framed, both being accepted by the meeting.

The attendance was about 60, considerably more than the usual number. Quite a number were visitors, and on motion they were granted the privilege of the floor. I. N. Broomell, D. D. S., read a paper on "The Relation of Pharmacy to Dentistry," illustrating it by use of a large number of lantern views. Joseph Head, D. D. S., read a paper on "Dentifrices and Their Ingredients," illustrating it with a number of specimens and a practical demonstration of the abrading action, on a tooth, of a dentifrice composed of supposedly harmless ingredients. Both papers, or abstracts therefrom, will appear in the JOURNAL.

Dr. Stewart opened a discussion, which was participated in by Messrs Blair, Kebler, and Cliffe, Professors Remington and Sturmer, and Doctors Lowe, McCullough, Wood, Urner, and Nodine. There were expressed

almost as many varieties of opinion, as to the merits or demerits of various dentifrice substances, as there were participants in the discussion.

F. P. STROUP,
Secretary Scientific Section.

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SAINT LOUIS BRANCH.

At the meeting of the Saint Louis Branch of the American Pharmaceutical Association, held on November 29, J. W. Mackelden was elected secretary to fill the vacancy caused by the resignation of Mr. William H. Lamont, who has moved to Kansas City.

Doctor George M. Heath gave a talk on the "Fixation of Atmospheric Nitrogen," and showed by lantern slides the principal furnaces now in use in various parts of the world for the manufacture of synthetic nitrogen products.

Doctor H. M. Whelpley showed by lantern slides some of the first prescriptions filled in the store of William Procter, Jr., the father of American Pharmacy, and commented on them. These prescriptions are very interesting from the point that they are written upon slips of paper of odd sizes, shapes and colors, clearly indicating that they were not die-cut, but torn from any piece of plain paper which happened to be at hand. The price charged for filling these prescriptions range from six cents for a four-ounce mixture to thirty-one cents for a twelve-ounce mixture.

In those days the physician signed only his initials, and the initials H. C. W. appearing on one of these prescriptions, Doctor Whelpley stated, were those of Doctor H. C. Wood, one of the compilers of the U. S. Dispensatory. Many questions were asked about these prescriptions, and one thoughtful member wanted to know of Doctor Whelpley how he came in possession of the first file, which contains about 20,000 prescriptions. Doctor Whelpley's answer was very interesting, but too long to repeat here.

Mr. Carl T. Buehler read two papers, one on the manufacture of Compound Solution of Cresol, and the other on the manufacture of Elixir of Terpin Hydrate. These papers were briefly discussed by Professors Hemm, Good, Suppan and Doctor Whelpley. A further discussion of them will be taken up at the December meeting.

J. W. MACKELDEN, Secretary.

CITY OF WASHINGTON BRANCH.

The regular December meeting of the City of Washington Branch of the American Pharmaceutical Association was held December 11, 1912, at the National College of Pharmacy. Mr. Lewis Flemer, President of the Branch, presided.

Following the regular order of business, the Chairman of the Committee on Nominations, Mr. S. L. Hilton, read the report on nominations which he, in conjunction with Mr. M. I. Wilbert and Dr. Henry E. Kalusowski, the other members of the committee, had prepared.

The report was received, and in the absence of other nominations, the Secretary was directed to cast the unanimous vote of the Branch for the nominees proposed by the Committee. This being done, the following officers were declared elected for the ensuing year:

President, Dr. Lyman F. Kebler.

First Vice-President, Mr. W. S. Richardson.

Second Vice-President, Dr. Henry E. Kalusowski.

Secretary, Mr. Henry B. Floyd.

Treasurer, Mr. Wymond H. Bradbury.

Committee Chairmen—Membership, Mr. Herbert C. Easterday; Legislation, Mr. W. S. Richardson; Medical Relations, Mr. Lewis Flemer; Scientific Papers, Dr. Rodney H. True; Publicity, Mr. J. Leyden White.

The Secretary then made a report on Commercial Pharmacy, wherein he cited O'Connor's Treatise on Commercial Pharmacy, from which he read certain sections which were discussed and criticised. The discussion then turned to Federal regulation of licensing pharmacists, after which the meeting was adjourned.

The next meeting will be held January 15, 1913.

HENRY B. FLOYD, Secretary.

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NASHVILLE BRANCH.

The regular meeting of the Nashville Branch of the A. Ph. A. was held at Furman Hall, Vanderbilt University, Thursday, December 12, at 3 p. m., Dr. J. O. Burge presiding.

After the reading and approval of the minutes of the preceding meeting the regular subject of Abstracts was taken up.

Interesting abstracts reviewing the year's

work in Pharmacy were read by Wm. R. White and Dr. J. O. Burge.

An interesting discussion followed the reading of an abstract relating to the causes of precipitation in Fluidextracts, which was participated in by Ira B. Clark, M. E. Hut-ton, and Dr. E. A. Ruddiman.

Dr. Burge told of a Fluidextract of Wild Cherry he made that had been filtered three different times this year and was still pre-cipitating.

Dr. E. A. Ruddiman then entertained the Branch by the exhibition of an explanation of the use of an Abbe-Zeiss Refractometer and a Haenitsh-Schmidt Saccharimeter.

After a thorough discussion of a plan to increase the membership of the A. Ph. A. in the Southern States the Branch adjourned to meet again Thursday, January 9, 1913.

WILLIAM R. WHITE, Secretary.



NEW YORK BRANCH.

At the meeting of the New York Branch of the American Pharmaceutical Association held December 9th, there were no reports by officers or standing committees with the exception of the committee on the progress of pharmacy. The chairman of that body, Otto Raubenheimer, reviewed in synopsis the following articles in recent European periodical literature: "The Differentiation of Cocaine and Its Synthetic Substitutes," "Hydrocyanic Acid in White Clover," "The Glucosides of Strophanthus," "The Use of Resins and Gum-Resins in Plasters," "The Constitution of Pi-crotoxin," "Incompatibility of Antipyrin and Pyramidon with Iodine and Iodides," "Filtering Liquids Containing Fine Precipitates," "Suggested Additions to the Belgian Pharmacopœia," "A Pharmaceutical Museum at Magdeburg," "A Comparison of the Toxicity of Methyl and Ethyl Alcohols," "The Use of Potassium Bicarbonate in Fowler's Solution," "The Detection of Mercuric Chloride in Calomel," "The Detection of Calomel in Mercury Bichloride," and "The Constituents of Tarax-acum."

This report was briefly discussed by H. V. Arny, and was duly received.

For the special committee on a plan for the certification of pharmacies, C. O. Bigelow, the Chairman, reported that the committee was of the opinion that only through legislation could its purpose be accomplished.

President G. C. Diekman appointed the fol-

lowing nominating committee: Hugh Craig, John Roemer, and J. L. Mayer. The nomi-nation and election of officers will take place at the January meeting.

A paper on "The Pharmacy of the Oxycho-lesterin Ointment Bases" was read by John Roemer. In this the author related his ex-periences with the adapting of ointment bases containing oxycholesterin to general prescrip-tion work.

Mr. Roemer had found it impossible to ob-tain in this country any of the waxy alcohol compound of the iso- and oxycholesterin group separated from wool-fat. As this sub-stance is the oxycholesterin which is said to add much to the usefulness of ointment bases, he attempted to get some by extraction from the oxycholesterin-hydrocarbon combination known as eucerin. This product, he said, did not agree very well with the definitions given by Dr. Unna at the June meeting. By ex-traction with various solvents and the frac-tionation of the solutions he found that the market product consisted of an oily liquid and a paraffin-like body. The oily liquid appeared to be a mixture of a cholesterin substance and a light hydrocarbon oil. This oily liquid had to a considerable extent the property of in-creasing the absorbing power of fats, which is characteristic of the waxy alcohols of wool-fat. This property was not very well devel-oped, however, except with hydrocarbon bases. The light petroleum distillates added to the oily liquid formed a base which would absorb about 800 percent. of water.

Petrolatum containing a small proportion of the oily liquid separated from eucerin, was found by Mr. Roemer to afford an excellent base for mercury and its salts, although "a deal of elbow grease" was required to make an ointment containing 75 percent. of mer-cury.

In connection with his remarks, Mr. Roe-mer exhibited some of the separated oxycho-lesterin liquid and a number of ointments pre-pared with oxycholesterin bases.

In discussing this paper, J. L. Mayer ques-tioned the wisdom of experimentation with proprietary or protected products. Otto Raubenheimer said that he had been told that eucerin had been improved by the use of petrolatum to replace the paraffin ointment in the original base.

* An unannounced but interesting feature of the meeting was an illustrated travelogue by C. A. Mayo covering the scenic itinerary

the visitors to the Denver meeting of the American Pharmaceutical Association. It needed not the description of the speaker to make plain the attractiveness of the sections of the Rocky Mountains visited as a part of the entertainment of the Denver meeting, as the lantern slides exhibited by Mr. Mayo depicted realistically a well-selected series of views. Doubtless all of his hearers agreed with his statement that those who do not attend the annual conventions miss much of a pleasurable nature.

Mr. Roemer and Mr. Mayo were formally thanked by the Branch.

At the January meeting C. P. Wimmer will deliver an address on "Chlorophyl."

HUGH CRAIG, Secretary.



CHICAGO BRANCH.

The December meeting of the Chicago Branch was held at the University of Illinois School of Pharmacy, Tuesday evening, December 17th, and was devoted to a symposium on "Pleasant Medication."

President J. H. Wells occupied the chair. Professor C. M. Snow presented a paper on Troches which considered the agents intended to be administered in this form, and gave an account of the troches included in the more recent foreign pharmacopœias. He pointed out that many of the troches official in foreign pharmacopœias are not included in the U. S. P. He compared a list of the U. S. P. troches from the first Pharmacopœia to the present. The speaker also discussed the flavoring with a discussion and forecast of the troches which will be included in the new National Formulary. Samples of several of these prepared for the occasion were shown.

Dr. Fantus then presented his paper on Candy Medication. He referred to the difficulties in getting children to take medicine when the medicine is unobjectionable, perhaps even pleasant, to the adult taste. Experience with children of fond and over-indulgent parents had led the speaker to avail himself of the child's well-known fondness for candy, in order to give the medicine in this form. He had found that the pharmacopœial lozenges, with the exception of the Santonin troches, were not suited to his purpose. As a result of his experiments Dr. Fantus laid down these principles: that candy medicine must be pleasant and must disintegrate rapidly in the mouth; that only tasteless or nearly tasteless medicaments can be

given in candy form, that a tightly-compressed tablet of powdered sugar is the most practical form for candy medication, as it keeps well and disintegrates rapidly. Dr. Fantus prepared several kinds of tablets extemporaneously, so as to indicate how readily the pharmacist might prepare these upon call. Neither great skill nor expensive equipment is required. Typical formulas were submitted and samples of about twenty kinds of candy medicine were shown.

Professor A. W. Linton of Valparaiso University discussed the Elixirs, prefacing his remarks with an interesting historical sketch from the time of the alchemists when the much-sought elixir was the one which would convert baser metals into gold, down through the later centuries when the 'elixir of long life' and similar preparations were given much attention, and from thence to our modern elixirs as represented in our Pharmacopœia and National Formulary. Professor Linton showed a number of specimens of the official elixirs and commented on them. He spoke of the desire for a wider range of flavors and told how it had been met in the elixirs proposed for the National Formulary. He referred also to the desirability of decreasing the alcohol strength as far as possible.

Mr. M. M. Burdick of the Abbott Alkaloidal Co. closed with the presentation of the subject of pleasant medication as dealt with by the manufacturer. He pointed out the advantages in equipment, accuracy and economy which the manufacturer possesses as regards some lines of pharmaceuticals and urged the need of greater cooperation between the various interests involved in the supplying of medicines.

The papers as presented were discussed by President Wells, Mr. Storer, Mr. Sass, Mr. Galloway, Mr. Loesch, Mr. Gray and others.

Upon motion, a vote of thanks was tendered the speakers of the evening.

A committee consisting of Professors Clark and Miner and Mr. Becker was appointed to present a list of nominations for the Branch offices at the January meeting.

W. B. DAV, Secretary.



PITTSBURGH BRANCH.

The meeting of the Pittsburgh Branch of the A. Ph. A., Friday evening, December 13, was marked by an exceptionally large attendance and the proceedings were well worth the

effort made by those who were there. It would have been a wise move upon the part of any druggist active in business to have taken the time to attend this meeting, even had it necessitated the paying of a relief clerk, the information given would be worth it all and more as an investment, and the profit greater than that from an average evening's sales in the drug store.

It will be recalled by those who read the proceedings each month that much attention was given at the November meeting to the numerous Cresol preparations, because of the thoughtless manner in which they are often, in fact almost universally dispensed, as not being of a dangerous character, hence not accompanied with cautionary advice to the buyer. Stress was laid upon the fact that one of the most prominent preparations of the class, Creolin-Pearson, bears a label containing the words, "Non-Poisonous." Following this discussion the Secretary was instructed to take up this matter with the distributors of Creolin-Pearson. The Secretary read the correspondence with Merck & Co., and called attention to the presence of Mr. B. L. Murray, chief chemist in charge of the firm's laboratory, at Rahway, N. J., who had come to the city for the express purpose of making the position of Merck & Co. with reference to Creolin-Pearson clear.

On motion of Dr. Emanuel, supported by Dr. J. C. Wallace, Mr. Murray was invited to take the floor and to participate in the discussion. Mr. Murray satisfied those present by laboratory notes, records of physiological experiments both at home and abroad, covering a period of more than 25 years, that not a single case of death from the use of Creolin-Pearson when properly used had ever been reported. This contention was backed by communications from eminent practitioners and institutions of prominence. He exhibited a new form of label upon which the non-poisonous statement is qualified by the words "when used in accordance with the directions given."

In a spirit of fairness we submit an epitome of Mr. Murray's remarks:

"In response to the invitation of the Branch communicated by Secretary Pritchard to the agents for Creolin-Pearson, I am here as their representative from New York to be present at this meeting. Creolin-Pearson is

an article that has enjoyed the widest possible use for nearly thirty years. It is used not only in the United States, but also in England, Germany, Austria, South Africa, India and other countries. Its use is not confined to hospitals and physicians where special training in the handling of drugs and disinfectants is found. It is used in the households of the world, where no special knowledge of disinfectants exists, and yet with all this extensive and indiscriminate use, no authentic case of the death of any person from the use of Creolin-Pearson has come to the attention of the agents. This alone is strong presumptive evidence of the non-poisonousness of Creolin-Pearson. In addition to this, the Imperial German government, through the department properly charged with such matters and corresponding to our Boards of Health, has publicly and officially declared Creolin-Pearson to be non-poisonous. The literature of medicine is found to contain many positive statements by physicians that Creolin-Pearson is not poisonous. These opinions have been corroborated by actual experiments in the laboratory. Numberless times small animals have been fed Creolin-Pearson in the laboratory at Rahway, N. J., without even causing sickness. The experimenter himself has taken a generous dose without even being sick. These experiments were made with Creolin-Pearson diluted in the customary manner as directed for household use. An amount equal to almost 5% of the body weight of the animals was given in these tests. In view of these conditions, it does not seem erroneous to label Creolin-Pearson non-poisonous. But, it may be said, by way of caution, that many imitations of Creolin-Pearson have been found to be decidedly poisonous. The cases that have been reported from time to time of poisoning from the use of creolin have, upon investigation, been always found to have resulted from some one of the various dangerous preparations sold under the name of creolin, and this has led some to the belief that it was Creolin-Pearson." During the discussion Mr. Murray said common salt has been known to produce death, and yet no one would ever for a moment think of classing sodium chloride as a poisonous drug.

Those who participated in the discussion were Drs. Emanuel, Judd, Wallace, Blumen-schein and Mr. Young. The latter said his

declaration that Creolin-Pearson had produced death was, no doubt, due to the use of the word creolin, which is usually associated in the druggist's mind with the word Pearson, even though that word does not appear.

A unanimous vote of thanks was tendered Mr. Murray for the trouble he had taken to come here for the purpose of clearing up the situation. The President appointed a nominating committee to prepare a list of nominees for the several offices to be filled and report at the next meeting.

Dr. J. H. Beal was given an ovation by the students present when he took the floor to deliver his illustrated lecture on "The Limestone Caverns of America." Dr. Beal presented many extremely instructive facts concerning the manner of formation of these extensive caverns, and gave the history of the three most widely-known, viz., the Mammoth cave of Kentucky, the Wyandotte cave of Indiana, and the Luray caverns of Virginia, together with many interesting and amusing incidents in connection with each. Dr. Beal opened with the statement: "The study of caves and their formation has a rightful place in pharmaceutical gatherings because they are all produced by chemical action; and, too, because they have been sometimes prescribed by physicians in the treatment of consumption, and every druggist ought to be prepared to fill all prescriptions that the physician may write."

In explanation of the latter statement the doctor cited an instance wherein a party of patients, all of whom were afflicted with consumption, had, under the advice of a physician, taken up their residence in Mammoth cave, where they lived for some time in the hope that by inhaling the dry air continuously their lungs would be healed. The experiment, however, was a failure for the reason that the quietness and depression of the environment overcame the healing properties of the air and many of them died. Dr. Beal showed a very large number of views taken by expert cave photographers of the most interesting and beautiful places found in caverns. At the close of his lecture Dr. Beal was given a most enthusiastic vote of thanks.

B. E. PRITCHARD, Secretary.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



SAMUEL MORTIMER SHIMER.

Samuel Mortimer Shimer, a prominent pharmacist of Middletown, N. Y., died on November 6, 1912, aged 56 years. He was born in the town of Mount Hope on September 8, 1857. He was a member of the firm of Ogden and Shimer, located in Middletown, and during his career had built up a large business. He joined the American Pharmaceutical Association in 1904. He was married on January 5, 1881, to Miss Harriet E. Wiggins, who, with three children, survive him. The funeral services were held at his late residence on November 19, 1912.

Council Business

COUNCIL LETTER No. 4.

Philadelphia, December 2, 1912.

To the Members of the Council:

Motion No. 3 (Time of 1913 Annual Meeting at Nashville), and Motion No. 4 (Election of Members, Nos. 18 to 29), have each received a majority of affirmative votes.

The following letters have been received by the Secretary.

H. H. Rusby writes:

"I desire to heartily second the remarks made by Professor Diehl, in his letter of November 15, regarding the desirability of having the Report on the Progress of Pharmacy published as it has been in the past."

A. H. Clark writes:

"I am opposed to any action leading to a reconsideration of the question involved in Prof. Diehl's letter (in Council Letter No. 3). I am opposed, also, to a National Apothecaries' Home, or rather to the American Pharmaceutical Association having anything to do with it."

W. B. Day Writes:

"I have Council Letter No. 3 and I have read it carefully. I sympathize with Professor Diehl and I think I understand his feeling regarding the publication of the Report on the Progress of Pharmacy in an annual volume, but I am fully convinced that the future of the Association depends very largely upon the success of its Journal and I believe that we ought to bend all our energies and expend all that can be spared of our income upon the Journal. While those of us who are teaching might find the annual report on the Progress of Pharmacy more convenient than monthly abstracts, still I believe that monthly abstracts would be much more widely read and would appeal much more strongly to the membership as a whole. I am not offering a motion on the subject as I take it that has already been acted upon and if a motion is brought forward it would be to reconsider the previous action of the Council and to this I am opposed.

"I believe that the decision of the House of Delegates in regard to the proposition of the National Association of Drug Clerks looking toward the establishment of a home should be approved by the Council. The matter is not yet in sufficiently definite form to make it wise for us to endorse it and if we do not endorse it we should not appoint the trustees from among our members as proposed by the N. A. D. C."

Motion No. 5 (Additional Appropriation for Journal, Printing, Postage, etc.) The appropriations for JOURNAL and for printing, postage and stationery having been exhausted, it is moved by J. A. Koch, and seconded by J. H. Beal that an additional appropriation of \$1200 for JOURNAL and \$500 for printing, postage and stationery be made.

J. W. ENGLAND,
Secretary of the Council.

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COUNCIL LETTER No. 5.

PHILADELPHIA, December 9, 1912.

To the Members of the Council:

Motion No. 5 (Additional Appropriation for Printing, Postage, etc.), has received a majority of affirmative votes.

On account of the extra work involved in the publication of Volume 59 of the Proceedings and preparing the annual index for the JOURNAL, the General Secretary has found it impossible to arrange a date when he could attend the proposed Legislative Conference at Washington, D. C., prior to January 1, 1913. (See October (1912) JOURNAL A. PH. A., page 1106.)

The General Secretary therefore moves, seconded by J. W. England, that the latest

date for such Conference be changed from January 1, 1913, to February 1, 1913.

This motion will be regarded as *Motion No. 6 (Postponement of Date of Meeting of Legislative Conference)*.

Motion No. 7 (Appropriation for Expenses of National Syllabus Committee). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of twenty-five (\$25) dollars be appropriated as the A. Ph. A. appropriation for expenses of the National Syllabus Committee.

J. W. ENGLAND,
Secretary of the Council.

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COUNCIL LETTER No. 6.

PHILADELPHIA, December 13, 1912.

To the Members of the Council:

The following communications have been received:

James O. Burge writes:

"I had intended answering your letter relative to the A. Ph. A. Receipt Book, but it was overlooked until now. I will take it up in connection with my discussion of Letter No. 3. I was glad to see Prof. Diehl's regarding the 'Report on the Progress of Pharmacy.' I was not at the Denver meeting and do not know what action was taken regarding the annual volume. It matters little whether we call it 'Year Book of Pharmacy,' 'Proceedings of the A. Ph. A.' or 'A. Ph. A. Annual.' I prefer the latter name, but I want to say that I would dislike very much to see its publication done away with. My reason for this is, that this volume has been a history of American Pharmacy from year to year, for so long a time, that it has got to be a regular "Reference Book" with many of us, and I always look anxiously forward each year to its coming.

"Now, I will tell you what I would like to see this volume contain. I believe it should contain the 'Progress of Pharmacy,' somewhat along the line it has been conducted, making the abstracts as full as the space devoted to its publication will admit of. I think it should contain the papers read at the annual meeting, the discussions of the same, and all important papers of general interest read before the different branches, such papers to be selected and passed upon by the Committee on Publication. The list of members in good standing at the end of each year, with their address, is a good thing and I think such titles or degrees as each member has acquired, either in Pharmacy, Medicine or Chemistry, should appear after his name. The formulas proposed in the Journal for the new Receipt Book, after being tried and criticised by the members, could be collected and published together here until enough were adopted to make a respectable sized book.

"This will give each member a ready bound

volume each year that will be worth something to him and which he will take care of, while if these things are given to us in the Journal only, not one out of ten at the end of the year will have his file complete, or have the same bound. I certainly favor the retention of the annual volume and believe in making it as valuable as possible. Some of our members who joined last year have been asking me about it, and one remarked that what he joined for was to get that volume."

J. M. Good writes:

"Professor Diehl's letter of November 15, 1912, discussing the matter of the publication of the Report on the Progress of Pharmacy, appeals to me with a great deal of force. It is 'an earnest plea for the conservation of the Report—as a concrete publication of the Association in the form in which it has appeared in our Annual Proceedings for over half a century.' He sustains his plea with arguments which, to my mind, are convincing and conclusive.

"The 'Report on the Progress of Pharmacy,' growing in importance with the years, is Prof. Diehl's contribution to scientific pharmacy. His contemporaries appreciate it and those who come after us will acknowledge their obligations to him. Even if I had misgivings as to the form in which it ought to be continued, I would hesitate to put my judgment in opposition to his. On this subject 'One', with Professor Diehl, 'is a majority.'"

Thomas F. Main writes:

"I find myself in entire accord with Professor Diehl in his belief that the publication of the Report on the Progress of Pharmacy piece-meal in the monthly Journal of the Association will by no means take the place of its former method of publication as a whole in the Annual Volume of Proceedings.

"There can be no question that the report when published in the Annual Volume was carefully preserved by every member of the Association and was more widely consulted as a reference book than any other work on pharmacy.

"It may be said that the report will be almost as accessible in the bound volumes of the Journal, but it will certainly not be as convenient, while it is doubtful if 50 per cent. of the membership of our Association will bind their Journals, and even when it is desired to bind them there is always more or less trouble connected with keeping the monthly numbers together, especially in pharmacies employing a number of clerks who are encouraged to read the Journal as it appears, as the larger the number of readers the more danger there is of numbers going astray.

"If a way can be found to publish the Report on the Progress of Pharmacy as formerly I think it should be done, as I believe it is more valuable to the members in the old form than any other than can be devised."

Motion No. 8 (Members to Board of Trustees Proposed by National Association of Pharmacologists (National Association of Drug Clerks).

Moved by F. J. Wulling, seconded by W. B. Day, that the recommendation of the House of Delegates that no appointment of members to a board proposed by the National Association of Pharmacologists (see Council Letter No. 2, p. 7) be made at this time, be approved.

The Finance Committee submits the following:

PROPOSED BUDGET OF APPROPRIATIONS FOR 1913. Item

1. Salaries	\$ 5500 00
2. Journal	5000 00
3. Printing and Stationery.....	1000 00
4. Clerical Expenses, Secretary's Office	1000 00
5. National Formulary	1000 00
6. Miscellaneous Expenses	300 00
7. Stenographers	250 00
8. Traveling Expenses	200 00
9. Committee on Membership....	250 00
10. Committee on Unofficial Standards	300 00
11. Proceedings	100 00
12. Badges and Bars.....	50 00
13. Certificates	50 00
14. Premium on Treasurer's Bond	37 50
15. Freight, Expressage and Drayage	150 00
16. Journals for Reporters.....	35 00
17. Section on Scientific Papers..	25 00
18. Section on Education and Legislation	25 00
19. Section on Commercial Interests	25 00
20. Section on Practical Pharmacy	25 00
21. Section on Historical Pharmacy	50 00
	<hr/>
	\$15372 50

Do you approve of budget of appropriations for 1913 as above proposed? This will be regarded as *Motion No. 9 (Approval of Budget of Appropriations for 1913).*

Motion No. 10 (Election of Members). You are requested to vote on the following applications for membership:

- No. 30. Oscar Brown, 500 Cottonwood St., Pendleton, Ore., rec. by J. H. Beal and J. W. England
- No. 31. Elias Georges Aggan, 93 Luckie St., Atlanta, Georgia, rec. by J. H. Beal and J. W. England.
- No. 32. Ralph W. Showalter, 3338 N. Illinois St., Indianapolis, Ind., rec. by Frank R. Eldred and Francis E. Bibbins.

- No. 33. Otto Martin Harter, 2 West Main St., Norwalk, Ohio, rec. by J. H. Beal and J. W. England.
- No. 34. Louis A. Elisburg, 520 Washington Blvd., Chicago, Ill., rec. by W. B. Day and A. H. Clark.
- No. 35. Henry W. Merritt, 1 S. Main St., Plains, Pa., rec. by J. H. Beal and John C. Wallace.
- No. 36. Augustus D. Daily, 4960 Laclede Ave., St. Louis, Mo., rec. by Francis Hemm and J. W. Mackelden.
- No. 37. George H. Sommers, 4900 Laclede Ave., St. Louis, Mo., rec. by J. W. Mackelden and A. D. Daily.
- No. 38. Ernest Monnier, 157 Federal St., Boston, Mass., rec. by John G. Godding and Harry W. Blake.
- No. 39. Max Riesenber, Camp Connell, Samar, P. I., rec. by Romanus Andrew LaGrindeur and J. W. England.



COUNCIL LETTER No. 7.

PHILADELPHIA, December 28, 1912.

To the Members of the Council:

Motions No. 8 (Members to Board of Trustees proposed by National Association of Pharmacologists (National Association of Drug Clerks), No. 9 (Approval of Budget of Appropriations for 1913), and No. 10 (Election of Members; applications Nos. 30 to 39, inclusive), have each received a majority of affirmative votes.

In the Budget presented in Council Letter No. 6 no appropriation was made for the recently-created Section on Pharmacopœias and Formularies, and on motion of A. H. Clark, seconded by J. W. England, an appropriation of \$25 (Item 22) is made to this section for 1913. It will be known as *Motion No. 11 (Appropriation to Committee on Pharmacopœias and Formularies)*. The appropriation is approved by the Committee on Finance.

The following communication has been received:

"To the Members of the Council:

In re subject of the Report on the Progress of Pharmacy:

I have read with interest the remarks of various members regarding the question of the Report on the Progress of Pharmacy. I am not in accord with the sentiments expressed therein.

I herewith present my views on the subject and before doing so I want to state that my sole object in desiring the Report to be published monthly in the form of abstracts is grounded in the belief that this is the only way that it will benefit a majority of our

members, thereby increasing the prestige and popularity of the A. Ph. A.

It is not through any enmity or ill-will for any one connected with this work, much less Professor Diehl. I well remember the time I first saw him. I was a country lad attending the Chicago College of Pharmacy for the first time, some twenty years ago. Professor Diehl delivered our opening address. Since then he has occupied a prominent place among those I have idolized for their personality and attainments in the realm of Pharmacy. Therefore, what I write must not be looked upon as an indication that I love Caesar less, but Rome more.

It seems to me a useless waste of money to print these articles partly, or wholly, in the JOURNAL from month to month, and then do the thing all over again at the end of the year in a separate volume. There is just as much reason for printing in a new volume all the papers, editorials, etc., that appear from month to month. And there is surely no reason for this.

Every up-to-date worker in any field wants to know what is going on around him at the present time, or as near the present time as is possible. Such workers *will get this information some way*, and therefore if we give it to them a year old it is useless because they already have it.

The advantage of a bound volume will be had when the JOURNAL is bound and indexed at the end of the year. The argument that the numbers of the JOURNAL will remain unbound, or be lost, has no force. Any one that does not place a value on them which will warrant the expense of binding will not be benefited by *any* information that they contain. If one positively cannot afford to bind them, the information will be as available in the unbound volumes as in the bound ones, provided a good index is supplied, and each volume kept together. Aside from all this, the Council at the Richmond meeting (1910) decided to supply every member with a bound volume if he so desires. To secure this volume all that is necessary is to notify the General Secretary or Editor, at the beginning of the year, that it is desired, and pay a small fee for the binding only; an entire new set of the twelve numbers being supplied free of cost. (I think this action very unwise, but do not recall having seen the action rescinded.)

As to the amount of work involved, I believe that with the money spent for salaries, printing, binding, etc., for a year book, the General Secretary could be provided with efficient clerical help, abstractors secured to look over the various publications and, in the end, money would be saved to the Association.

I really see no necessity for publishing a complete roster of members every year. Such a list can hardly be prepared that is accurate. Incidentally, considerable valuable space is wasted every month in the JOURNAL by publishing the long list of officers and committees.

The only argument that I can see against the publication of monthly abstracts, and one that will apply with equal force to an argument to abolish *both* the Year Book and monthly abstracts is this: we have delayed so long in this matter that we have allowed another society, the American Chemical Society, to step in and under the able leadership of one of our own members, supply the long-felt want for complete and up-to-date pharmaceutical abstracts. The manner in which these abstracts are appearing, *every two weeks*, not monthly even, is the most convincing argument I know of that it is *not too much* work to prepare them on time. We all know that Mr. Wilbert has many other things to do, but somehow he does this in addition to all the others. A. H. CLARK.

CHICAGO, ILL., December 21, 1912."

The resolution referred to above as adopted by the Richmond (1910) meeting of the Association was as follows: "Members who notify the General Secretary *at the beginning of each year* may receive a *bound* volume of both the JOURNAL and the Report *at the end of the year* upon the payment of a price to be fixed by the Committee on Publication." (Bulletin, A. Ph. A., 1910, 356.)

At the Boston (1911) meeting, the whole subject of JOURNAL was reconsidered, and a resolution was adopted, that the size of the Report on the Progress of Pharmacy should be the same as the JOURNAL, so that the two publications could be bound together, if desired, and as directed for members by the Association at the Richmond (1910) meeting. (Bulletin, A. Ph. A., 1911, 579.)

In Council Letter No. 20 (Motion No. 4), 1911-12, Edward Kremers moved, seconded by A. H. Clark, that "the Council reconsider at the Denver (1912) meeting the question of publishing the Report on the Progress of Pharmacy as a separate volume, and to add the money thus saved to the JOURNAL, which could just as well publish the abstracts and do this at a much earlier date. The Reporter on the Progress of Pharmacy could be added to the editorial staff of the JOURNAL." The motion carried.

At the Denver (1912) meeting it was decided to publish the Report on the Progress of Pharmacy covering the period from June 30, 1910, to December 31, 1911, with the official data, etc., as a separate volume or Proceedings (Volume 59, 1911), and also, *that future Reports on the Progress of Pharmacy be published monthly in the Journal, beginning January, 1913.*" (Journ., A. Ph. A., 1912, 1070, 1103.)

On November 19, 1912, in Council Letter No. 3, Prof. Diehl's letter on the subject of the Report on the Progress of Pharmacy was presented, and it has been discussed by members of the Council in Council Letters No. 4 (December 2, 1912), No. 6 (December 13, 1912), and the present letter, *but no motion has been offered to reconsider the action of the Denver (1912) meeting in abolishing the annual volume and providing that all future Reports on the Progress of Pharmacy shall be published monthly in the Journal, beginning January, 1913.*

Hence, the resolutions of the Denver (1912) meeting of the Council, approved by the Association, as above outlined, are in full force.

General Secretary Beal advises that Volume 59, 1911, of the Proceedings (covering the Report on the Progress of Pharmacy between June 30, 1910, and December 31, 1911), as directed by the Denver (1912) meeting, is now going through the press, and will be issued early in 1913.

J. W. ENGLAND,

Secretary of the Council.

415 N. 33d St.

THALLIUM ACETATE AS A DEPILATORY.

R. Sabouraud (noted in *The Prescriber*, May, 1912) says that thallium acetate has been tried in medicine, but had to be abandoned because of its tendency to produce alopecia. The author takes advantage of this very property by using the salt as a depilatory. He prepares a salve containing about 8 grains of thallium acetate in 1 ounce of cold-cream containing some zinc oxide. A very small quantity applied to the lip each evening will cause rapid disappearance of downy growth.—*Clinical Medicine*.

SOME MEDICINE OF 300 YEARS AGO.

"We know diseases of stoppings and suffocations are the most dangerous in the body, and it is not much otherwise in the mind; you may take sarza to open the liver, steel to open the spleen, flour of sulphur for the lungs, castoreum for the brain, but no receipt openeth the heart but a true friend, to whom you may impart griefs, joys, fears, hopes, suspicions, counsels, and whatever lieth upon the heart to oppress it, in a kind of civil shrift or confession."—*Essays of Francis Bacon*.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.



O. J. BOMBA,
From Yorktown, Texas,
To Westhoff, Texas.

GEORGE A. CROSSMAN,
From Raynham, Mass.,
To Taunton, Mass.

ANDREW CAMPBELL,
From Johnstown, Pa.,
To Greensburg, Pa.

LOUIS REICHERT,
From 307 4th Ave., Pittsburg, Pa.,
To 418 Library St., Braddock, Pa.

R. A. LAGRINDEUR,
From Camp Connell, Samar, P. I.,
To Camp Eldridge, Los Banos, Laguna,
P. I.

SGT. GABRIEL CUSHMAN, H. C., U. S. A.,
From Columbus Barracks, Columbus, O.,
To Ft. Barry, Calif.

Q. J. BARKER,
From Ft. Wm. McKinley, P. I.,
To Care Walter Reed, General Hospital,
Takoma Park, D. C.

ROY M. SOULT,
From E. Liberty St., Pittsburg, Pa.,
To Prospect, Pa.

EDGAR B. KEEMER,
From 2213 4th St., N. W., Washington,
D. C.,
To 633 Fairmont St., N. W., Washington,
D. C.

CARL E. SMITH,
From 627 Spruce St., Philadelphia, Pa.,
To General Delivery, San Francisco, Cal.

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(Recent changes in pharmacists, assignments, etc.):

Miller, Charles, pharmacist. Leave of absence for 30 days from October 1, 1912, amended to read "27 days' leave of absence from October 3, 1912." November 1, 1912.

Smith, L. G., pharmacist. Directed to report to Commanding Officer, Marine Hospital, Wilmington, N. C., for temporary duty. December 6, 1912. Granted six days' leave of absence from November 23, 1912, under paragraph 210, Service Regulations. November 25, 1912.

Osborn, John L., pharmacist. Leave of absence, without pay, for 90 days from August 13, 1912, amended to read "93 days' leave of absence, without pay, from August 13, 1912." December 6, 1912.

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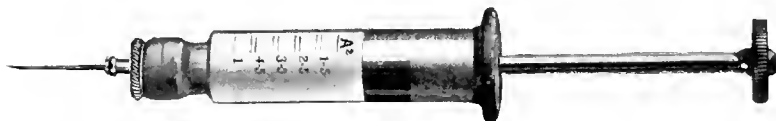
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This is not a personal matter, it is a peculiarity of the national intelligence; it is a general mental condition; a condition to which even the retailers themselves, are, unhappily, far from immune. In fact, it is the Dead-Sea fruit of years of indifference, of the lack of organization, of individual intelligences pent up within the Utcas of single stores, or towns.

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* Report corrections to the General Secretary.

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Will the retail druggist never "tumble" to the miserable conditions in which he finds himself with hundreds and thousands of brother pharmacists? The only retail druggists in this country who have ever made a success of the business are and were practical pharmacists; to this statement we will make those few exceptions where large capital has been able to establish large and brilliant successes, through the reprehensible cut-rate route of taking away your brother druggists' bread and butter.

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What we would say by this, and emphatically, is that no pharmacist can make a commercial success of his business unless he is a professional man, and we can prove it. Any druggist can prove it if he will analyze himself and analyze drug conditions. He may think he is a success, but he is not. He is merely existing, and he is generally only existing from hand to mouth.—*N. A. R. D. Notes.*

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ANTE-MORTEM CONJECTURES AND POST-MORTEM FINDINGS

THAT ancient humorism of the physician who was asked what ailed his patient and rather absently replied, "We don't know yet, but we expect to find out at the autopsy," is rather forcibly recalled by an instructive paper read by Dr. Richard C. Cabot at the last meeting of the American Medical Association, on "Diagnostic Pitfalls Identified During a Study of Three Thousand Autopsies."*

In his paper Dr. Cabot not only gives the ratio of diagnostic hits to misses, as determined by the three thousand subsequent autopsies, but discourses upon the causes of failure in a manner that should be highly interesting to the medical practitioner, but would probably be as unedifying to the average pharmacist reader of this journal as it is to the editor.

While Dr. Cabot frankly admits that in numerous instances the mistake in diagnosis was due to overlooking visible evidences of the disease, and therefore justly chargeable to incompetence or carelessness on the part of the physician, yet it seems clear that in the majority of cases the failures can be attributed only to imperfection of method—which is only another name for imperfection of diagnostic science—and not to lack of capacity or care on the part of the diagnostician.

He says: "As one looks at the accompanying chart of diagnoses one naturally asks: Whose success or failure does this represent? Where Smith and Jones have failed, could you and I have done better? I doubt it. The study of the details in these cases before and after death convinces me that, for the present and under the present limitations of diagnostic method, few of the mistakes tabu-

*Journ. A. M. A., December 28, 1912, 2295.

lated above could have been avoided. The table represents the success-and-failure ratio of certain methods rather than of certain men. Admitting that the man behind the gun (or the method) makes a vast difference, I do not believe that these figures depend to any considerable degree on the possession or lack of special virtuosity in diagnosis. They mirror the methods of an average up-to-date American hospital."

The chart of diagnoses referred to is as follows:

PERCENTAGES OF DIAGNOSTIC SUCCESS.

TABLE SHOWING GRAPHICALLY THE PERCENTAGE OF CORRECT DIAGNOSES IN
VARIOUS DISEASES.

DIABETES MELLITUS, 95%
TYPHOID, 92%
AORTIC REGURGITATION, 84%
CANCER OF COLON, 74%
LOBAR PNEUMONIA, 74%
CHRONIC GLOMERULONEPHRITIS, 74%
CEREBRAL TUMOR, 72.8%
TUBERCULOUS MENINGITIS, 72%
GASTRIC CANCER, 72%
MITRAL STENOSIS, 69%
BRAIN HEMORRHAGE, 67%
SEPTIC MENINGITIS, 64%
AORTIC STENOSIS, 61%
PHTHISIS, ACTIVE, 59%
MILIARY TUBERCULOSIS, 52%
CHRONIC INTERSTITIAL NEPHRITIS, 50%
THORACIC ANEURYSM, 50%
HEPATIC CIRRHOSIS, 39%
ACUTE ENDOCARDITIS, 39%
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HEPATIC ABSCESS, 20%
ACUTE PERICARDITIS, 20%
ACUTE NEPHRITIS, 16%

For obvious reasons, the diagnoses of diabetes mellitus and typhoid are nearly always correct, but from this point onward the percentage of successful guesses slumps rapidly, until only one guess in two is correct in interstitial nephritis and

thoracic aneurysm, while in acute nephritis only a pitiful sixteen in a hundred cases were correctly identified before death.

Truly there seems to be an atom of truth in the witty definition of a physician as one who puts drugs about which he knows little into bodies about which he knows still less.

In addition to the cases tabulated, the author gives some further very interesting information, as for example:

In Pott's disease only four out of seventeen cases were recognized in life; of eighty cases of cirrhosis of the liver, forty-nine were not recognized; in hepatic abscess, eighty percent of the diagnoses were mistaken; in cancer of the colon over twenty-five percent of the cases were not recognized, and in cancer of the esophagus twenty-five percent of the diagnoses were failures. In thirty-nine cases of diabetes the autopsies showed "nine cases of active tuberculosis, and not one of them was recognized in life. In one other case, tuberculosis was diagnosed, but pneumonia (not tuberculosis) was found."

Concerning acute uremia he says: "I have never found a correct diagnosis of acute uremia, yet the diagnosis is a frequent one," from which we infer that of the asserted cases none has been found to be true to label when the final analysis (i. e., autopsy) was made.

It would be vastly comforting if the facts would permit us to go on and show how much better the pharmacist succeeds in his special line of compounding and dispensing, but a mental review of his shortcomings in other directions suggests that it would be well not to invite invidious comparisons.

J. H. BEAL.



PROPOSED FEDERAL ANTINARCOTIC LEGISLATION.

THE average citizen is rarely inclined—small wonder perhaps—to study carefully and analytically the language, (or verbiage?) of proposed legislative enactments, especially when they relate to complex and technical subjects like pharmacy and medicine. Usually he is content to take his opinions at second hand, and approves or disapproves such measures accordingly as they are praised or condemned by his favorite newspaper or professional journal.

Possibly it is this general indifference to laws in the process of making that explains why so many acts apparently adopted in obedience to popular demand are so unpopular after they have been placed upon the statute books, and it is possibly for the same reason also that courts and executives are so frequently assailed when laws do not work out in the way their sponsors thought they would.

Probably no legislation since the Food and Drugs Act of 1906 has such importance for all branches of the drug trade, or is so deserving of dispassionate study and critical analysis as the so-called Harrison Bill, now in Congress, relating to the traffic in opium and cocoa leaves, their derivatives and preparations.

This bill has been before Congress in several forms, but is now known as H. R. 28277, though it is possible that it may have some other form and title by the time this reaches the reader.

In form the bill is a revenue measure, though admittedly its real purpose is to

give a certain degree of Federal control over the traffic in the above named drugs within the limits of the several states, and is not expected to produce more revenue than will fairly cover the cost of its administration.

The purpose of making it a revenue measure is, of course, clear, viz., to make it applicable within state limits, since without the revenue feature it could operate only in interstate commerce, and could not regulate traffic in the articles after they had crossed state lines and their original packages had been broken up.

The bill does not propose to control or regulate the distribution of these habit-forming drugs to the actual consumers, this function belonging exclusively to the province of the states themselves.

It follows, therefore, that the deterrent effect of the law will arise out of the fact that it will confine the distribution of these drugs within well defined, and presumably legitimate, commercial channels, and that it provides a method for tracing them in all of their forms from the time they reach the ports of entry until they reach the hand of the last distributor, the retailer. As a consequence the retailer will no longer be able to obtain these drugs surreptitiously. His registration with the Internal Revenue Collector as a licensed dealer, his order on file with the jobber or manufacturer, and the reports which he must make will furnish indisputable evidence of the quantity of these drugs which pass through his hands.

Here the operation of the Federal law very properly ceases; the state law must provide for and control the distribution to the ultimate consumer.

The main provisions of the bill are in brief as follows:

(1) It applies to opium and cocoa leaves, their salts, (i. e., salts of their alkaloids) derivatives and preparations.

(2) Those who manufacture or deal in these drugs are defined, and are classified as importers, exporters, wholesale manufacturers or manufacturing pharmacists, wholesale dealers, and retail dealers.

(3) Each member of the above classes must register annually with the Collector of Internal Revenue in his district, and pay an annual tax, which is set at \$1.00 for the retailer and \$25.00 for each of the other classes.

(4) None of these, except the retailer, may dispense any of the drugs named except to other dealers registered with the Collector of Internal Revenue.

(5) It levies a tax of five cents per pound on opium, and one quarter of a cent per pound on cocoa leaves, to be paid by affixing and cancelling stamps of appropriate denominations, under such rules and regulations as the Commissioner of Internal Revenue may prescribe.

(6) It provides for the use of duplicate order blanks obtained from the Collector of Internal Revenue, upon which all orders for the named drugs must be made out, and no dealer may sell or ship on any order not written on such blanks, except sales by the retailer direct to the consumer.

(7) One of these duplicates is to be retained by the purchasing dealer and the other by the seller for a period of two years, thus automatically furnishing a

complete record of every transaction, and such records shall be open to inspection by the duly authorized Federal or State authorities.

(8) Each of the registered dealers is required to keep such books and render such returns of his purchase of such drugs as the Commissioner of Internal Revenue shall from time to time determine.

(9) Every applicant for registration under the act must file with his application a sworn report of the quantity of the named drugs and their preparations on hand at the time of his application, and to the containers of these must be affixed and cancelled the appropriate amount in stamps.

(10) The provisions of the act do not apply to the manufacture, sale, etc., of preparations that do not contain more than two grains of opium, $\frac{1}{4}$ grain of morphine, $\frac{1}{3}$ grain of heroin, or 1 grain of codeine, or their salts or derivatives, in one fluid or avoirdupois ounce, nor to liniments, ointments or other preparations for external use only, provided they are not dispensed for the purpose of evading the provisions of the act.

(11) The provisions of the section relating to interstate commerce do not apply to the delivery of prescriptions of duly registered physicians, dentists, and veterinarians, when compounded by persons registered under the act.

(12) Possession of the named drugs, their preparations, etc., shall be deemed as sufficient evidence of violation of the act unless the defendant shall explain such possession to the satisfaction of the jury.

(13) Collectors of Internal Revenue are required to furnish to state or municipal officers, on request, lists of the registered dealers in their respective districts, and certified copies of the records in their offices, upon payment of a fee of \$1.00 for each 100 names or 100 words.

(14) The penalty provided for violation of any of the provisions of the act is a fine of not more than \$2000.00 or imprisonment for not more than five years, or both, at the discretion of the court.

(15) Existing revenue laws, and the provisions of the Food and Drugs Act, and of the act prohibiting the importation and use of opium for other than medicinal purposes, so far as applicable, are to apply to the provisions and enforcement of this act.

The foregoing are the main provisions affecting the rights and liabilities of manufacturers and dealers, the remaining portions relating principally to the machinery and detail of administration.

All portions of the drug trade, or at least all portions entitled to consideration, are agreed that some Federal legislation is necessary to aid in controlling the traffic in habit-forming drugs, and the objections they have offered to the several Harrison Bills were addressed to details rather than to their substance, i. e., to the methods proposed for carrying the substantive provisions of the law into effect. Some of these provisions were so complex and burdensome that they would have compelled druggists to abandon the sale of preparations containing opium and cocoa or their derivatives in even the smallest amount—preparations which from their nature could not be used either to create a habit or to satisfy it where it already existed.

The principal modifications of the Harrison Bill secured by the National Drug Trade Conference held in Washington, Jan. 15-17, the proceedings of which are printed elsewhere in this issue, are as follows:

Reducing the wholesale license fee from \$100.00 to \$25.00, and the retail license fee from \$5.00 to \$1.00.

Modifying the definition of wholesalers so that the retail pharmacist can make the ordinary galenical preparations of opium, such as laudanum and paregoric, without being required to take out a wholesaler's license.

Changing the phraseology in certain particulars so as not to interfere with the supplying of the drugs to physicians, dentists and veterinarians for legitimate use, and so as not to interfere with the reasonable liberty of these in their administration of such drugs.

Substituting the use of an official order blank furnished by the Collector of Internal Revenue for the burdensome requirement of stamping all derivatives or preparations of opium and cocoa, and for the elaborate records and returns which the original bill required. No dealer can obtain supplies of the named drugs, except when the orders are written upon these official order blanks, while the preservation of their respective copies by the purchaser and seller for the period of two years, furnishes a complete record of the drugs until they reach the hands of the retailer.

It is difficult to imagine a simpler method of tracing the drugs, or one which would impose a lighter burden upon those who handle them legitimately, the only extra labor imposed upon the purchasing dealer being that he must make out two copies of his order instead of one, and that one of these copies must be retained on file for a period of two years.

It must not be imagined that any form of law can be devised that will be entirely free from objections, or that will not impose some burdens upon the pharmacist and physician, no matter how conscientious they may be in the handling of these drugs.

Since society began those who have been willing to deal justly with their fellow men have been compelled to bear the burden of laws intended to curb the actions of those who are not controlled by conscientious motives, and no one has yet been able to suggest a method that will relieve the honest and conscientious citizen from this hardship.

J. H. BEAL.

Book Reviews

PHARMACOLOGY AND THERAPEUTICS FOR STUDENTS AND PRACTITIONERS OF MEDICINE. By Horatio C. Wood, Jr., M. D., Professor of Pharmacology and Therapeutics in the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital, Second Vice-Chairman of the Committee of Revision of the U. S. Pharmacopoeia. Philadelphia and London, J. B. Lippincott Company; 8 vo., pp. 429.

The purpose held in view by the author of this excellent work can be best expressed by quoting the opening paragraphs of his preface:

"The last two decades have witnessed extraordinary advances in all branches of medical science, but in none of them more striking than in pharmacology. Twenty years ago this department of medical knowledge was a jumble of isolated facts; today it is an orderly science. Our knowledge of the changes produced by drugs in the bodily function has been enormously increased, but more important than this expansion in our information as to what drugs do, is the fact that we are beginning to understand how they do it, and thereby to become able to correlate the facts of drug action. The present conception of pharmacology is utterly different from that of a generation ago.

"Owing partly to this epochal advancement in the science of pharmacology, and in part to the new ideas of teaching which have been introduced into the whole medical curriculum, there has been in the last ten years a revolution in the methods of teaching pharmacology. The old style of text-book of materia medica and therapeutics is so fundamentally at variance with modern ideas that it is almost impossible to make it conform to the needs of the present-day student. The author has had this conviction brought home with more and more force by each succeeding class of students for several years, and it is the feeling that there was need of a book which should present the concept of today in a form sufficiently concise and comprehensive to be available for the ordinary student which has led to the preparation of this work."

It is gratifying also to read further, that: "The author feels equally strongly that pharmacology is of no value to the medical student save as a basis for practical therapeutics, and the more clearly the student can be made to perceive the relation between pharmacological science and the clinical employment of drugs for the relief of human suffering, just so much more value will his pharmacology become to him, and the more successful will be his future therapeutics. There is sometimes a tendency today to condemn the so-called practical branches of the medical course, and to unduly exalt the scientific branches, just as a few years ago there was a very evident tendency in the opposition direction. The author believes that for the sake of impressing the student with the importance of a knowledge of the fundamental science, as well as to assist him in the associating of its facts, it is advisable that both scientific facts and their clinical application should each receive its due amount of attention in a book on therapeutics, and

he has endeavored to subordinate neither the science nor its application in this present work, but to emphasize their mutual interdependence."

Perfect success in the carrying out of these ideas is not to be expected of any individual, but within the limits assigned by the 400 odd pages, and the necessity of adapting the work to the comprehension of students, the author has produced a creditable and useful volume.

A preliminary study of pharmaceutical data, of prescription-writing and of the mode of action of drugs makes up the first chapter. The succeeding chapters are devoted to different classes of medicaments, as follows:

Chapter II. Drugs used to affect secretion: Diuretics; Diaphoretics; Expectorants; Drugs which diminish secretion.

Chapter III. Drugs used to affect the nervous system: Somnifacients: Anesthetics; Analgesics; Spinal depressants; Motor nerve paralyzants; Sensory nerve paralyzants.

Chapter IV. Drugs used to affect circulation: Cardiac stimulants; Vasomotor stimulants; Drugs which reduce blood pressure; Treatment of chronic heart disease.

Chapter V. Drugs used to affect the alimentary tract: Stomachics; Emetics; Cathartics.

Chapter VI. Drugs affecting metabolic processes.

Chapter VII. Drugs acting on causes of disease: Anthelmintics; Antimalarials; Disinfectants.

Chapter VIII. Extraneous remedies: Digestants: Alkalies, Demulcents, Emollients, Counter-irritants, Escharotics.

Chapter IX. Drugs of minor importance.

There is a fair index.

The text is not only meaty, but also well flavored, the author's style being lucid and concise.

There are a number of illustrations elucidating various points in the action or application of remedies, but the book is not over-loaded with tracings or elaborate diagrams. In fact, the most striking feature of the author's work is temperate restraint in the matter of laboratory detail. There is sufficient to give the student a good idea of what the laboratory can do, and of the facts which have actually been established concerning the various medicaments discussed, but he is not confused either with elaborate protocols of individual experiments, or with numerous reports of conflicting observations.

A good feature of the book, and one which is to be highly commended, is the recognition of the great part played by the autonomic nervous system in physiology, in pathology and in therapeutics. It is also refreshing to find allusions to (and sometimes studies of) a number of drugs which are either not official or not frequently referred to in recognized medical literature; for example, Apocynum, Convallaria and Adonidin, which the author classes as cardiac stimulants; the Peroxide salts and Methylthionine among disinfectants and antimalarials; Theophyllin among diuretics; Grindelia among expectorants; etc.

On the other hand, we are sorry to miss studies on Quebracho and its alkaloids, which Wood is peculiarly well qualified to treat of, since he himself has

done a valuable piece of experimental work upon these agents, and is not unfamiliar with their clinical uses. We are also sorry to find nothing about Cactus, which is important enough to demand consideration from both the clinical and the laboratory sides, and concerning which much pharmacologic nonsense on the one hand and clinical extravagance on the other, have been published. An authority like Wood, who understands and can correlate experimental and clinical work, could do much to settle the vexed questions concerning this medicament. It may be, however, that these omissions, which can only be deliberate, were imposed upon the author by his plan already alluded to, to omit that which would disturb the student without corresponding advantage. We can hope, however, that in some future study, whether text-book or otherwise, he will give practicing physicians the advantage of this knowledge concerning these two very important drugs.

There is a brief but judicious article upon Salvarsan; and other non-official but well attested synthetic compounds, such as heroin, dionin, etc., also obtain recognition.

Concerning the classification adopted by the author, which follows in a measure that of his illustrious father, it is to be said that it is understandable and practicable, and is much to be preferred to the no-classification plan. It is not perfect, but a perfect classification is indeed impossible. The reviewer's classification differs from that of the author, but this is not the place to discuss the relative values of two different approximations to an ideal impossible of realization. All that can be demanded of any arrangement of drugs is that it shall be helpful to the student in acquiring knowledge, and to the physician in applying the knowledge acquired, and this is to be acknowledged of Wood's.

What we miss most of all in this book—and again the omissions must be deliberate and self-imposed—are definite therapeutic advice and differentiation. We do not mean to imply any obscurity or ambiguity, but rather a lack of specificity. The author has been somewhat general in his discussion of the uses of drugs, and rarely goes into detail. Nevertheless his recommendations are sound, and sufficient to give the student a comprehensive idea of the lines along which the different drugs may usefully and intelligently be applied.

On the whole, the book is to be heartily commended as a sincere and faithful presentation of the present status of pharmacology and therapeutics and their interrelations, and as laying a broad and firm foundation of therapeutic knowledge upon which the student can build according to his ability. We look forward to considerable popularity for the work, and to a demand for many subsequent editions.

S. S. C.

DUNN'S PURE FOOD AND DRUG LEGAL MANUAL. By Charles Wesley Dunn, A. M. of the New York Bar. Dunn's Pure Food and Drug Legal Manual and Corporation, 32 Liberty street, New York, N. Y., 2 Volumes Buckram. Price \$12.00 net.

The first of the above named volumes, embracing 2347 pages, is now at hand. The second volume is in course of preparation and will bring the number of pages to over four thousand in all.

Prior to the appearance of this work, complete and authentic knowledge of the Federal and State Statutes, department rules and regulations, and court decisions has been available only in the form of pamphlets or in more or less complete compilations issued by the various authorities charged with the enforcement of the laws, or published by various associations, as the National Wholesale Druggists and the Proprietary Associations. All of these compilations, while valuable, were necessarily restricted in scope and completeness by the fact that they were intended mainly for free distribution.

Dunn's Pure Food and Drug Legal Manual is in the nature of an extended treatise upon the whole subject of food and drugs law, including Federal, state, territorial, and special, food, drug, paint, oil and turpentine laws, rules and regulations; food standards, food inspection decisions, and the leading court decisions, all classified in form for ready reference.

An idea of the character and extent of the work may be gathered from the synopsis of part one, the subject matter of which is classified under the following main divisions: Scope of the law, administration and enforcement, guaranty, original package, food and drugs affected by the law, adulteration of food, misbranding or mislabeling of foods, adulteration of drugs, misbranding or mislabeling of drugs, export of food and drugs, and import of food and drugs.

This portion of the work takes up 1834 pages of Volume 1, the law of each state being analyzed and interpreted in accordance with official rules and judicial determinations.

The work is encyclopedic in character, and is designed to present the entire law of the United States, both state and national, as applied to the adulteration, sophistication and misbranding of food and drugs. It will doubtless be accepted as the leading authority upon the subject by courts and attorneys, as well as by manufacturers and dealers in the products concerned.

J. H. BEAL.

DIGEST OF LAWS AND REGULATIONS IN FORCE IN THE UNITED STATES RELATING TO THE USE, SALE, AND MANUFACTURE OF POISONS AND HABIT-FORMING DRUGS. By Martin I. Wilbert and Murray Galt Motter. Public Health Bulletin No. 56. Government Printing Office, Washington, November, 1912. Paper—Pages 278+V. 25 cents.

This useful compilation presents in condensed form the portions of the Federal, State, and Territorial statutes relating to the sale and use of poisons, including intoxicating liquors, cocaine, and habit-forming drugs, and the statutory standards for drugs, classified under the names of the respective states, and Alaska, the Canal Zone, Hawaii, and the Philippine Islands.

Most of the statutory provisions are quoted verbatim, though in some instances their principal provisions are given in abstract. The volume contains an interesting introductory chapter relating to the general subject, and extended tables showing, in abstract, the requirements of the various laws regulating the sale of poisons and narcotics, cocaine and narcotics, the requirements relating to poisons and narcotics embodied in the food and drugs laws, and of the various laws designed to restrict occupational poisoning. These tables cover 31 pages

of the book, and are constructed so as to show readily the principal requirements of the laws to which they relate.

The volume also contains a list of the authorities consulted, a full and well arranged index, and a list of the Public Health Bulletins issued by the Public Health Service to date. Its completeness, excellent arrangement, and the evident care with which the abstracting has been done, are highly creditable to its authors and to the Public Health Service.

Copies can be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C.

J. H. BEAL.

HOW TO DEAL WITH PHARMACEUTICAL CROOKS.

There always have been and probably always will be rascals and crooks in every trade, calling, or profession. To detect and punish and expel them is not easy. Among the very men who are employed to aid in the work of detecting and punishing and expelling are rascals and crooks. But flagrant cases of depravity, lawlessness, unprofessional conduct and other forms of remissness on the part of members of the pharmaceutical profession should and can be, and sometimes are, punished in a more effectual way than that specifically provided by law in such cases. The payment of a fine for selling sub-standard goods may amount in effect merely to the payment of a license fee for permission to break the law. It may seem profitable to the man lacking in moral sense, to save a hundred dollars on materials and be fined only fifty dollars for supplying goods not of the proper quality or strength. Doubtless there are men masquerading as pharmacists who would not hesitate to make fifty dollars in this way. The thing for the other kind of pharmacists to do is not only to cooperate with the forces of law and order to make the fines larger than the profits of law-breaking, but to show the public that retail dealers in drugs who jeopardize health and life by making it a business to sell drugs of inferior quality have no standing in representative drug circles. They have done this to a certain extent. The greater this extent is made, the fewer complaints of dishonesty will be lodged against the profession of pharmacy as a whole, and when complaints are lodged, the better will be the position of those members of that profession who are not guilty of the shortcomings charged. A prominent Brooklyn druggist expressed the correct idea in discussing a recent wholesale accusation of substitution on the part of druggists, when he said that the members of the profession who do a legitimate business are desirous of seeing the substitution evil wiped out and, in their efforts to abolish it, would welcome the cooperation of the man making the charges.

Often when the hue and cry about druggists has subsided and the charges have been sifted, it is found that members of the pharmaceutical profession are not the law-breakers, but rather that they are the innocent victim of law-breakers who make no pretense of being pharmacists.—*The Druggist's Circular*.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

TENTATIVE STANDARDS FOR SOME BIOLOGICALLY STANDARDIZED DRUGS.

CHAS. C. HASKELL AND CHAS. R. ECKLER, INDIANAPOLIS, IND.

During the past four years we have had occasion to test by experiments upon lower animals a number of samples of drugs not suited for chemical assay. It seemed to us that an analysis of the results secured would possess a certain amount of interest and might shed some light on the unsettled question of biological assay. On the other hand, could it be assumed that the methods employed were reasonably accurate, inferences might be drawn as to provisional standards for some of these drugs. While no one will dispute the desirability of adjusting preparations of these drugs to definite standards, it must be admitted that two very important essentials have not yet been fulfilled to the satisfaction of everyone; namely, the selection of absolutely reliable assay methods and the clinical testing of preparations assayed by such methods. The methods we have employed have seemed to us the best, but it is quite possible that they are unsuitable, a point which can be settled only by careful investigation and cooperation among laboratory workers and between them and clinicians.

For the Digitalis series, we have used the one hour frog heart method of Cushny. Temperature is carefully noted and the end point is considered as reached when the frog's ventricle is motionless and tightly contracted in systole, sixty minutes after injection. The alcoholic strength of the solutions injected has varied between 5 and $33\frac{1}{3}$ percent, a percentage as high as the latter not affecting the size of the dose necessary to stop the heart. The frogs have varied in weight from 10 to 40 grams, usually weighing near 20 grams. We have been unable to see any difference between male and female frogs in regard to resistance to poisoning by digitalis and its allies. At certain seasons, the frogs seem more susceptible to ouabain than at others while such is apparently not true of the susceptibility to digitalis. The values given below are the amounts in fractions of a gram per gram frog weight necessary to cause systolic stoppage of the frog's heart in 60 minutes.

First in the digitalis or heart tonic group comes convallaria. Three samples of convallaria root assayed at temperatures between 20° and 24° gave values of:

1. 0.000125
2. 0.000125
3. 0.000150

Two samples assayed at higher temperatures gave values of:

1. 0.0002 at 26°C
2. 0.00015 at 27°C

Three samples of *F. E. Convallaria Root* assayed at temperatures between 20° and 24° gave values of:

$$\left. \begin{array}{l} 1. \ 0.0002 \\ 2. \ 0.000125 \\ 3. \ 0.000150 \end{array} \right\} \text{Average} = 0.000158$$

Four samples of *F. E. Convallaria Root* assayed at higher temperatures gave values of:

$$\left. \begin{array}{l} 1. \ 0.00015 \text{ at } 25^{\circ} \\ 2. \ 0.0002 \text{ at } 25^{\circ} \\ 3. \ 0.0001 \text{ at } 27^{\circ} \\ 4. \ 0.0002 \text{ at } 28^{\circ} \end{array} \right\} \text{Average} = 0.000162$$

One sample of *convallaria flowers* assayed between 20° and 24° gave a value of 0.00005.

One sample of *F. E. convallaria flowers* assayed under similar conditions gave a value of 0.0001.

Twenty samples of *digitalis leaf* were assayed at temperatures between 20° and 24°. Of this number, two gave a value of 0.00035; three gave a value of 0.0004; six gave a value of 0.00045; two gave a value of 0.00050; four gave a value of 0.00055; one a value of 0.00060; one a value of 0.00065; and one a value of 0.00075.

Five samples of *digitalis leaf* were tested at higher temperatures with the following results:

$$\left. \begin{array}{l} 1. \ 0.0004 \text{ at } 25^{\circ} \\ 2. \ 0.00063 \text{ at } 25^{\circ} \\ 3. \ 0.00045 \text{ at } 25.5^{\circ} \\ 4. \ 0.00030 \text{ at } 26^{\circ} \\ 5. \ 0.00045 \text{ at } 27^{\circ} \end{array} \right\}$$

Nine Samples of *F. E. digitalis* were tested at temperatures between 20° and 24°. One sample gave a value of 0.00055; one, 0.00060; two, 0.00070; one, 0.00090; one, 0.00095; one, 0.0011; one, 0.0013; one, 0.0015. (Average 0.000922). Four samples of *F. E. digitalis* were tested at higher temperatures with results as follows:

$$\left. \begin{array}{l} 1. \ 0.00085 \text{ at } 26^{\circ} \\ 2. \ 0.00075 \text{ at } 26.5^{\circ} \\ 3. \ 0.00070 \text{ at } 29^{\circ} \\ 4. \ 0.00055 \text{ at } 32.5^{\circ} \end{array} \right\} \text{Average} = 0.000712$$

Eleven samples of *tincture of digitalis* were assayed at temperatures between 20° and 24°. One sample gave a value of 0.0050; three samples, 0.0060; five samples, 0.0065; one sample, 0.009; one sample, 0.010. (Average 0.0067.)

Three samples of *tincture digitalis* were tested at higher temperatures with the following results:

$$\left. \begin{array}{l} 1. \ 0.005 \text{ at } 26^{\circ} \\ 2. \ 0.0060 \text{ at } 27^{\circ} \\ 3. \ 0.0055 \text{ at } 29^{\circ} \end{array} \right\} \text{Average} = 0.0055$$

Three samples of *squill* were assayed at temperatures between 20° and 24°. Of these three, two gave a value of 0.00045, one a value of 0.00050. Four samples of *squill* were assayed at higher temperatures, the results follow:

$$\left. \begin{array}{l} 1. \ 0.0004 \text{ at } 25^{\circ} \\ 2. \ 0.0005 \text{ at } 26^{\circ} \\ 3. \ 0.0005 \text{ at } 29^{\circ} \\ 4. \ 0.0005 \text{ at } 29^{\circ} \end{array} \right\}$$

Twelve samples of *F. E. squill*, acetic, were assayed at temperatures between 20° and 24°. Of these, three gave a value of 0.0015; three a value of 0.00175; one a value of 0.002; one a value of 0.0022; two a value of 0.0025; two a value of 0.003.

Five samples of *F. E. squill* acetic tested at higher temperatures gave the following results:

1. 0.0035 at 25°
2. 0.0015 at 29°
3. 0.0040 at 30°
4. 0.0015 at 30.5°
5. 0.0035 at 31.5°

Three samples of *strophanthus* seed were tested at temperatures between 20° and 24°. Of these, one gave a value of 0.000006; one a value of 0.000015; one a value of 0.000010.

Five samples of *strophanthus* seed were tested at other temperatures, the results being:

1. 0.000006 at 18°
2. 0.000006 at 18.5°
3. 0.000005 at 25°
4. 0.000003 at 25°
5. 0.000003 at 33°

Twelve samples of tincture of *strophanthus* were tested at temperatures between 20° and 24°. Of these, one gave a value of 0.00004; three a value of 0.00045; one a value of 0.00052; one a value of 0.000055; two a value of 0.000060; one a value of 0.000080; one a value of 0.000085; one a value of 0.0001; and one a value of 0.00011.

Eight samples examined at higher temperatures gave values as follows:

1. 0.00017 at 24.5°
2. 0.000045 at 25°
3. 0.000050 at 25.5°
4. 0.000038 at 28°
5. 0.000045 at 29°
6. 0.000038 at 32°
7. 0.00004 at 28.5°
8. 0.00004 at 33°

All samples of crude drugs are examined by the botanist before being sent to our department, so that adulterated, mouldy, or otherwise unsatisfactory samples are not tested by us. It is immediately evident that a rather remarkable uniformity in strength exists in most of the samples of crude drugs that we have examined. Thus, of three samples of *convallaria* root assayed at the "optimum temperature," the variation in strength was only about 16 2/3 percent. Two samples examined at higher temperatures should, theoretically, have been capable of stopping the heart when given in smaller dose, but such was not the case.

Of twenty samples of *digitalis* leaf, secured, chiefly from German and English jobbers, examined at temperatures between 20° and 24°, fifteen did not vary much more than 30 percent while the greatest difference between the samples was 114 percent.

Of five samples of *digitalis* leaf tested at higher temperatures, four agreed fairly closely in strength, the largest dose being 50 percent greater than the

smallest. Here, also, temperature did not seem to play a very important role. The twenty samples assayed at the optimum temperature averaged 0.000490, while those assayed at higher temperatures averaged 0.000446.

Of the three samples of squill assayed between 20° and 24° two gave the same value while one required a dose 11.1 percent greater. Of the four samples assayed at higher temperatures, the strongest was sufficient in a dose 20 percent smaller than the remaining three. Here, three samples assayed at the optimum temperature gave an average value of 0.000466, while the four assayed at higher temperatures gave a value of 0.000475.

No such uniform results were secured in testing the samples of *strophanthus* seed submitted to us. Of the three samples tested at the optimum temperature, the extremes showed a difference of almost 300 percent. The samples tested at slightly lower temperatures gave the same values, agreeing with the best one of the three preceding. Of the three samples tested at higher temperatures, all were efficient in doses smaller than those found necessary at the optimum temperature, two of the samples being efficient in a dose one-fifth that of the smallest dose encountered when the testing was done at the optimum temperature. The average of the five samples tested at temperatures below 24° was 0.0000086, while the three tested at higher temperatures gave an average value of 0.00000366. Apparently, temperature plays a much more important role in regard to *strophanthus* than it does in regard to the other members of the *digitalis* series tested, a point already brought out by Baker (*Am. Jour. Pharm.* Vol. 84, page 247, 1912).

Several interesting points seem to be evident from the tests of galenical preparations of these drugs. If first the results secured in assaying fluidextracts of *convallaria*, *digitalis*, and *squill*, are examined, it is seen that much greater variation is encountered than was the case in the examination of the crude drugs. Thus in three samples of F. E. *convallaria* tested at the optimum temperature the variation amounted to 60 percent; while in four samples tested at higher temperatures the variation was 100 percent. In nine samples of F. E. *digitalis* tested between 20° and 24°, the variation was almost 200 percent., while in four samples tested at higher temperatures the variation was about 54 percent.

In twelve samples of F. E. *squill*, acetic, assayed between 20° and 24°, there was a variation of 100 percent; while in five samples tested at higher temperatures, the variation amounted to almost 300 percent.

It is with considerable hesitancy that we draw positive conclusions from work carried out as ours has been, but while such uniform results were secured in testing samples of *convallaria*, *digitalis* and *squill* and such variations occurred when it was a question of the fluidextracts, it does seem at least to suggest that something is wrong with the fluidextracts, either the strength of menstruum or method of manufacture.

Houghton has already shown the practical impossibility of producing a satisfactory U. S. P. F. E. *Digitalis*.

Tr. of *Digitalis*, U. S. P., is, according to our tests, a more reliable preparation. Of eleven samples tested between 20° and 24°, eight agreed closely in

strength, the variation being only about 8 percent. Of three samples of tincture of digitalis tested at higher temperatures, the variation amounted to 20 percent.

Not only is there lack of uniformity in regard to the strength of these fluid-extracts, but both the official fluidextracts and tinctures do not regularly represent the theoretical drug strength. Thus, five samples of convallaria root tested by us gave an average value of 0.000150, while seven samples of fluid-extract of convallaria gave an average value of 0.000160.

Twenty-five samples of digitalis leaf gave a value of 0.000481, while thirteen samples of the fluidextract of digitalis gave an average of 0.000850. Seven samples of squill gave an average value of 0.00047, while twelve samples of acetic fluidextract of squill gave an average value of 0.002. The average of the value of fourteen samples of tincture of digitalis was 0.0065 against the average value 0.000481 found on testing the crude drug.

Of scarcely less importance than the digitalis group is ergot. Unfortunately, the work we have done in testing samples of ergot has not been so thorough as the preceding, so any conclusions drawn from the results secured are even more liable to be erroneous.

The method for testing ergot has been the one used for a number of years by Dr. Edmunds, and is a modification of Houghton's. The test animals are white Leghorn cocks of nearly a year old. It is desirable that the fowls be of practically the same age, weight, and kept under similar conditions. The drug, in the form of a fluidextract, is injected deep into the breast muscles, and changes in the comb are noted. The dose administered is considered efficient when distinct bluing of comb and wattles result within one or two hours.

In a number of instances we have run, in addition, blood-pressure experiments, according to the directions of Wood and Hofer, but these results possess, we believe, little importance in view of the work of Edmunds and Hale (Hygienic Lab. Bl. 76, July, 1911.), and our own experience, (Journ. A. Ph. A. Vol 1, p. 412, May, 1912).

Nineteen samples of ergot were tested by the cock's comb method. The first fifteen were administered in a dose of 1.5 gm. per kilo and caused bluing of the comb in that dose,¹ with only one exception, where a dose of 2 gm. per kilo was necessary. The last four samples caused bluing when given in a dose of 0.75 gm. per kilo, but failed to affect the comb when given in a dose of 0.50 gm. per kilo.

Of the nineteen samples, five were tested by the blood pressure method, the results being as follows:

	Initial rise in mm.	5 minutes after inj.	10 minutes after inj.	53 minutes after inj.
1	70	..	..	52
2	37	..	21	..
3	58	..	53	..
4	20	..	24	..
5	65	..	30	..

Fifty-six samples of fluidextract of ergot were tested by the cock's comb method. Of this number only two required a dose of 2 cc. per kilo, while three were efficient in a dose of slightly less than 0.75 cc. per kilo.

¹ No smaller doses were tried.

It might be inferred from these assays that carefully inspected ergot, free from adulterations and visible evidences of deterioration should cause bluing of the cock's comb in a dose of 1 to 1.5 gm. per kilo of body weight of white leghorn cocks as described. From the evidence we have gathered, we are inclined to believe that the official fluidextract of ergot is a good preparation, should run fairly uniform in strength, and should cause bluing of the comb when injected in a dose of 1 to 1.5 cc. per kilo.

So far as we can judge, the white leghorn cocks show no seasonal variation, but this is far from absolutely proven. Age affects their susceptibility to ergot, and individual fowls are encountered that possess increased or decreased susceptibility.

For cannabis indica we have employed Houghton's method, the drug being administered orally to dogs. It is important, we believe, to use one breed only, and fox terriers have seemed to us peculiarly suited for test animals. The method, at best, is crude, and uniform results can scarcely be expected when any mongrel is used.

Five samples of cannabis indica were tested. Two caused symptoms of intoxication in the dogs when given in a dose of 0.015 gm. per kilo; one produced symptoms in a dose of 0.018; one was efficient in a dose of 0.020; and one in a dose of 0.030. Four of these samples were tested near the same time in the years 1909, 1910 and 1912, so season played no part.

Fourteen samples of the fluidextract of cannabis indica were assayed with the following results:

1	0.015	8.	0.020
2	0.018	9.	0.020
3	0.018	10.	0.021
4	0.018	11.	0.024
5	0.018	12.	0.025
6	0.019	13.	0.050
7	0.020	14.	0.050

The last two samples assayed were made from deteriorated drug, so should not be considered. In the remaining twelve samples, the variation amounted to 66 2/3 percent.

It would seem that a standard requiring that 0.020 gm. of cannabis indica (or 0.020 cc. of a fluidextract of cannabis indica) per kilo of a suitable dog should not be a difficult one to conform to.

In conclusion we wish to emphasize the fact that the results we have secured are only suggestive. Were we dealing with definite substances of known strength, inferences as to the values of the methods would be justified, or if we were assaying substances of unknown strength by reliable and universally accepted methods, inferences could be safely drawn as to the probable strength of such substances. As it is, however, we are dealing with two unknowns. That such agreement as has been noted in some cases is the result of coincidence seems scarcely probable, however, and inclines us to place confidence in the methods and results.

REMARKS ON ASSAY OF PEPSIN AND ITS PREPARATIONS.

L. HENRY BERNEGAU AND LEO H. GLICKMAN.

The following results were obtained with three various methods for testing the digestive power of pepsin. The amount of undigested egg albumen left after two and one-half hours digestion at 52° C. was practically the same in all three methods, viz: less than 1 cc.

Method No. 1—U. S. P. Method.

Method No. 2—U. S. P. Revised Method.

The latter method is the same as the U. S. P. Method with the following exceptions:

Instead of adding 20 cc. of diluted acid at once to the 10 gm. of white of egg, only 2 cc. at a time is added and the white of egg disintegrated with a glass rod tipped by a piece of pure rubber tubing.

This has an advantage over the U. S. P. Method, as it is much easier to disintegrate the white of egg which has become compressed to a certain extent by passing it through the sieve, in a small volume of the acid solution, than in a large volume, such as 20 cc. added at once.

In the revised U. S. P. Method, during the two and one-half hours digestion the bottles are rotated three times every ten minutes, while in the U. S. P. Method the bottles are inverted. We believe inverting to be superior to rotating.

Referring to that sentence in the U. S. P. Revised Method which states "then remove it from the water bath, add 50 cc. of cold distilled water, transfer the mixture to a conical measure having a diameter not exceeding 1 cm. at the bottom and let it stand for half an hour"; we would suggest that it be substituted by the following: "Remove it from the water bath, pour contents into a conical measure having a diameter not exceeding 1 cm. at the bottom and then wash the undigested egg albumen which adheres to the sides of the bottle, with small portions (about 10-15 cc. at a time) of distilled water until 50 cc. has been used."

We would also suggest that the conical measure be inverted or its contents be stirred after the 50 cc. of distilled water has been added, as this no doubt will accelerate the settlement of the undigested albumen.

Method No. 3—This method is the same as the U. S. P. Method with the following exception:

Instead of disintegrating the white of egg with a rubber-tipped glass rod, the mixture is shaken vigorously for about five times. Results were the same after about two and one-half hours digestion at 52° C., less than 1 cc. of undigested egg albumen was left. Absolutely fresh eggs, not older than five days and always kept in an ice chest, were used in all our experiments.

The same lot of pepsin was used in these tests.

Conclusion—As seen from this outline, all three methods give concordant

results, if carried out strictly according to directions. Personally, we give preference to Method No. 2.

Some samples of pepsin previously analyzed by us and found to be of required strength were submitted, on request, to a certain college for comparative tests.

The amounts of undigested egg albumen left on their assays varied considerably from the amounts we found in our laboratory. Second assays made by us verified our first findings, while at the college different findings were obtained on the second assays.

It is without doubt that in all cases fresh eggs were used, that the pepsin was correctly weighed and that the dilutions were made in standardized measures, etc.

Now, what is the reason for these discrepancies in assay by different parties?

So far as we could see, the only possible cause for the deviation was the different strength of the hydrochloric acid used in making the tests.

That our supposition was correct will be clearly shown by the following:

The percentage of absolute hydrochloric acid in U. S. P. hydrochloric acid made by different manufacturers varies very greatly. The U. S. P. requires 31.9% absolute hydrochloric acid by weight; most of the manufacturers turn out a product which runs higher, usually from 32% to 35%, sometimes as high as 38%. It is therefore absolutely necessary that each lot should be assayed before using for any purpose.

The U. S. P. requires an acid which assays exactly 0.3% hydrochloric acid. That this requirement should be strictly carried out, that no acid assaying lower or higher should be used, the following table will illustrate.

On using 5 cc. of the same pepsin solution and 35 cc. of diluted acid of different strengths the following results were obtained:

I. PEPSIN SCALES

(1)	Tested with 0.21% HCl.	left 5	Cc. undigested Egg Albumen
(2)	Tested with 0.30% HCl.	left 1	Cc. undigested Egg Albumen
(3)	Tested with 0.328% HCl.	left 1½	Cc. undigested Egg Albumen
(4)	Tested with 0.385% HCl.	left 2½	Cc. undigested Egg Albumen
(5)	Tested with 0.540% HCl.	left 19	Cc. undigested Egg Albumen

II. ESSENCE OF PEPSIN N. F.

(1)	Tested with 0.21% HCl.	left 6	Cc. undigested Egg Albumen
(2)	Tested with 0.30% HCl.	left 1	Cc. undigested Egg Albumen
(3)	Tested with 0.328% HCl.	left 1½	Cc. undigested Egg Albumen
(4)	Tested with 0.385% HCl.	left 3	Cc. undigested Egg Albumen
(5)	Tested with 0.540% HCl.	left 17	Cc. undigested Egg Albumen

Several other comparative tests were made with the same proportional results. This evidently shows that the egg albumen's digestive power of pepsin is lowered by using either a lower or higher percentage of hydrochloric acid than that of 0.3%.

A CONVENIENT METHOD FOR THE ESTIMATION OF ALBUMIN IN URINE.

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The determination of albumin in urine by weighing the precipitated albumin or by determining its amount by the Kjeldahl method, requires so much time that it is not adapted to the needs of the clinician. Several methods have been devised for the approximate determination of albumin, depending upon the measurement of the volume of a precipitate after centrifuging or allowing to stand. Upon trying these methods they were found to give results so unreliable as to be of little value.

As titration methods for albumin did not seem practicable, an endeavor was made to obtain the albumin in the form of a precipitate the volume of which would bear a more constant relation to the amount of albumin present. As it had been observed that acetone precipitated albumin in a flocculent form from aqueous solutions, it seemed probable that this precipitate would settle rapidly and compactly owing to the low specific gravity of the acetone. This was found to be the case with specimens of urine containing albumin, but aqueous solutions of serum albumin yielded a precipitate which did not settle readily, indicating that some other constituent of the urine affected the precipitate. Various constituents of normal urine were tried and it was found that if a small amount of monobasic sodium phosphate was added to the albumin solution, the precipitate would settle as rapidly as from urine. It was soon observed that in order to obtain satisfactory results, the urine must be distinctly acid, and for this purpose acetic acid was added to the acetone.

Method—Filter the urine if cloudy and measure 1 cc. from a pipette or burette into a 5 cc. graduated test tube having an internal diameter of 9 mm. Dissolve about 0.04 gm. of monobasic sodium phosphate in the urine and fill the test tube to the 4 cc. mark with a mixture of 98 volumes of acetone and 2 volumes of glacial acetic acid, both of U. S. P. quality. Close the test tube with a stopper, invert slowly six or seven times and then shake vigorously for thirty seconds. Allow the test tube to stand in a vertical position for exactly fifteen minutes; read off the volume of the precipitate and determine the percentage of albumin by reference to the following table:

Cubic Centimeters Precipitate	Percent Albumin	Cubic Centimeters Precipitate	Percent Albumin
0.20	0.09	0.75	0.91
0.25	0.13	0.80	1.01
0.30	0.17	0.85	1.10
0.35	0.22	0.90	1.19
0.40	0.29	0.95	1.29
0.45	0.37	1.00	1.38
0.50	0.45	1.05	1.48
0.55	0.54	1.10	1.59
0.60	0.64	1.15	1.72
0.65	0.73	1.20	1.86
0.70	0.82	1.25	2.05

If more than 1.25 cc. of precipitate is obtained, dilute the urine with an equal

volume of water and make a new test, using 1 cc. of the diluted urine, and multiplying the percentage found in the table by two.

In compiling this table, sixteen aqueous solutions of serum albumin varying in strength from 0.1% to 2.0% were prepared. These solutions were standardized in the following manner. The albumin was precipitated with potassium mercuric iodide, heated in a water bath, separated by filtration and determined by the Kjeldahl method using the factor 6.3. About forty determinations were made upon each of these solutions by the acetone precipitation method. A curve was plotted from the average results obtained, and from this the table was constructed. The use of normal urine instead of water in making up the albumin solutions caused no difference in the results; and in a number of pathological specimens gave results which agreed closely with those obtained gravimetrically. While it can not be expected that a method of this kind will give accurate results, yet if carried out with proper attention to details it will be found to give more accurate results than those obtained by other methods based upon the volume of the precipitate.

The results are not influenced by ordinary variations in temperature; nor by the changes in acidity or amount of phosphates caused by the varying composition of different urines.

Considerable variations in the diameter of the measuring tube or in the manner of mixing the liquids were found to affect the results.

The precipitate settles so rapidly that after fifteen minutes the volume changes very slowly. For this reason, it did not seem necessary to consider centrifugal separation as a means of shortening the method, although it is probable that good results might be obtained in that way.

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THE ASSAY OF SOME U. S. P. CHEMICALS.

FRANK X. MOERK AND JOSEPH W. EHMAN.

Assay processes for chemicals should be made as simple as possible and with the aid of as little apparatus as is consistent with good work. Comparison of past Pharmacopoeias shows remarkable advance in the number of assays directed, and the ninth revision now in progress will undoubtedly show the greatest advance; this is shown by the consideration given to chemicals for which no assay processes have ever been officially prescribed, as in the case of nitrates, chlorates, etc., owing to manipulative difficulties and the need of special apparatus.

ASSAY OF CHLORATES.

FRANK X. MOERK.

A number of processes for the assay of this class of salts have been published which will be briefly outlined:

1. Decomposition of the chlorate by heat into the corresponding chloride

and determining this either volumetrically or gravimetrically; results apt to be low, due to the volatility of the chloride.

2. Reduction by means of sulphuric or acetic acids and metallic zinc; satisfactory results are obtained by gravimetric, but unsatisfactory by volumetric methods (residual titration), owing to difficulty with the end reaction.

3. Reduction with Na_2SO_3 and H_2SO_4 ; results as above.

4. Reduction with SnCl_2 and HCl and titrating excess of SnCl_2 with Iodine V. S.; results vary, probably due to atmospheric oxidation of SnCl_2 , which can, however, be prevented by working in an atmosphere of CO_2 .

5. Reduction with KI and HCl and measuring the liberated iodine with $\text{Na}_2\text{S}_2\text{O}_3$ V. S.; results vary, due to the liberation of iodine from the reagents in presence of air, but can be made satisfactory by boiling the reagents in a current of CO_2 and allowing the decomposition of the chlorate to proceed after expelling the air by means of CO_2 .

6. Reduction with an excess of a ferrous salt in presence of HCl or H_2SO_4 , determining the excess with $\text{K}_2\text{Cr}_2\text{O}_7$ V. S. or $\text{K}_2\text{Mn}_2\text{O}_8$ V. S.; the presence of HCl interferes in the titration with $\text{K}_2\text{Mn}_2\text{O}_8$, while with $\text{K}_2\text{Cr}_2\text{O}_7$ the end reaction is obtained by spotting. The atmospheric oxidization of the ferrous salt is also a source of error.

The following method gave satisfactory results and is free from the objections indicated in the preceding methods, but attention should be called to the ratio between the chemical and the number of cc. of a decinormal V. S., thus:

0.1 gm. KClO_3 (99.5%) requires 48.7 cc. N/10 $\text{Na}_2\text{S}_2\text{O}_3$ V. S.

0.1 gm. NaClO_3 (99.5%) requires 56.1 cc. N/10 $\text{Na}_2\text{S}_2\text{O}_3$ V. S.

Place 0.1 gm. of the salt in a glass stoppered bottle (150-200 cc), dissolve in 10 cc. water, add 15 cc. KBr sol. (10%) and 20 cc. HCl (sp. gr. 1.20) and allow to stand forty minutes; after cooling the bottle and its contents by immersion in cold water, carefully rinse stopper, using 20 cc. KI solution (10%) and titrate with decinormal $\text{Na}_2\text{S}_2\text{O}_3$ V. S. (Results 99.5%; 99.73%; 99.85% KClO_3). 1 cc. N/10 V. S. = 0.00204266 gm. KClO_3 or 0.0017743 gm. NaClO_3 .

A blank test should be made to prove that the combined reagents do not liberate iodine.

ASSAY OF BENZOATES AND SALICYLATES.

JOSEPH W. EHMAN.

Methods which have been used in the assay of these classes of organic salts are as follows:

1. Ignition to change into the corresponding carbonates or oxides, which if soluble, are extracted with water and titrated with Acid V. S., methyl orange indicator. Complete ignition to remove separated carbon is likely to entail loss due to the volatility of alkali carbonates; incomplete ignition is followed by a tenacious retention of the alkali carbonate by the charcoal.

2. Ignition to thoroughly char, treating residue with an Acid V. S. in excess, filtering, thoroughly washing with water and titrating the excess of Acid V. S. with an Alkali V. S., methyl orange indicator. Suitable for organic salts of those non volatile metals whose oxides or carbonates can be titrated.

3. Ignition with H_2SO_4 , changing organic salt to sulphates; suitable for

organic salts of those metals whose sulphates are stable; in the case of salts of K and Na, persulphates are likely to be formed, giving an excessive weight, but this can be prevented by treatment with ammonia or ammonium carbonate solution, evaporation to dryness and re-ignition.

4. Ignition with $(\text{NH}_4)_2\text{SO}_4$ as above; this does not form persulphates.

5. In the case of organic salts, the acid of which when liberated may be removed by immiscible solvents, as ether, chloroform, etc., a measured excess of an Acid V. S. may be added, the organic acid extracted with the solvent and the excess of Acid V. S. titrated with an Alkali V. S., (in the aqueous portion), methyl orange indicator.

6. Extraction of the acid as in (5), but allowing the volatile solvent to evaporate at ordinary temperature and weighing the residue of free organic acid.

The following modification of (5) and (6) gave satisfactory results:

0.200 to 0.500 gm. of the salt, placed in a separator and dissolved in 20 to 30 cc. water, add 2 to 4 cc. N/1 H_2SO_4 (or HCl) (note); a mixture of ether 1 vol. and chloroform 2 vols. is used for extraction, of which three portions of 15-20 cc. each are usually sufficient for complete extraction; to the mixed ether-chloroform extractions in a flask, add a little water (10cc.) and titrate with N/10 NaOH V. S., phenolphthalein indicator; or, the first portion separated may be titrated, then the second added, titration continued and so on until no more Alkali V. S. is required to give a permanent pink color to the aqueous layer after thorough agitation.

The following results were obtained:

Sodium Salicylate	Ammonium Salicylate	Strontium Salicylate	Sodium Benzoate	Lithium Benzoate
98.088%	98.28%	98.38%	99.063%	99.059%
99.32%	98.147%	98.38%	97.41%	
99.72%				
100.039%				
100.12%				
98.82%				

Note.—The amount of acid required here is slightly more than the calculated amount to decompose all the salt (e. g. each 0.100 gm. sodium salicylate requires a little over 0.6 cc. N/1 V. S. for an excess).

Chloroform is the most convenient solvent, but more of it is required than of ether; the latter is less convenient to separate, but a heavy mixture of the two has been found quite satisfactory.

CHEMICAL LABORATORY OF THE PHILADELPHIA COLLEGE OF PHARMACY.

THE QUALITY OF DRUGS.*

W. A. PEARSON, PHILADELPHIA, PA.

Asafetida.—*Asafetida* is a drug that cannot be powdered without considerable loss of the active volatile constituents present. Of five lots of the pow-

* Notes made from the files in the Analytical Department of Smith, Kline and French Co. upon the drugs examined from June 1, 1911, to June 1, 1912.

dered drug examined the ash amounted to 34.3%, 38.9%, 37.7%, 35.8% and 26.4%, and the alcohol soluble portions respectively were 29.5%, 31.1%, 27.6%, 33.1% and 37.9%.

There was an improvement in the quality of the samples of crude drug examined. One trial sample contained 60% of alcohol soluble material and only 6% of ash. However when the consignment arrived and two samples from the cases examined the alcohol soluble material amounted to 38.7% and 37.6% and the ash to 17.1% and 22.4% and two samples of the best lumps in the cases contained 57.8% and 58.3% of material soluble in alcohol and 6.8% and 15.6% respectively of ash.

Acetic Acid.—Two samples were rejected because they were dark in color.

Antimony and Potassium Tartrate.—A trial sample was examined which contained calcium, chlorides, heavy metals, and assayed only 94%.

Tannic Acid.—One sample was examined which contained 1% of ash. This drug continues to be of different colors and quality, no doubt due to its source and method of preparation.

Apiol Green.—The physical appearance and solubility of commercial samples of this drug vary considerably. The color varies from light green to dark brownish green and some samples will mix clear with an equal part of alcohol and some will not. All but one of the four samples examined when mixed with ten times their volume of alcohol formed considerable deposits and only one sample mixed clear with 4 volumes of olive oil.

Alkanet Root.—One consignment of this drug was rejected because it was inferior in appearance and was deficient in the amount of coloring matter present. About half of the material was in the form of a gray powder and only 2.2% of Anchusin was present. After rejecting this lot, a consignment was supplied which contained 9.7% of Anchusin.

Burgundy Pitch.—The analytical results on two samples of this drug were as follows:

	Sample No. 1	Sample No. 2
Acid Number	135.0	142.8
Ester Number	32.2	22.0
Saponification Number	167.2	164.8
Iodine Number	131.2	132.1

After the determination of the saponification number the solution was acidified and the alcohol evaporated. This treatment left a clear, dark brown and brittle residue from No. 2, while the residue from No. 1 after similar treatment was a dark brown, sticky, viscid substance with a turpentine odor.

Precipitated Calcium Phosphate.—It is difficult to obtain lots of this product that will comply strictly with U. S. P. specifications. Most of the samples examined failed to respond to test for absence of acid calcium phosphate, excess of chlorides, heavy metals or magnesium. One sample contained 7.5% of magnesium.

Calomel.—This salt becomes dark in color on standing even when protected from the light. It may take a year or more for the color to change perceptibly.

Cannabis Indica.—A Mexican and an American grown sample were found which were much below standard.

Celery Seed.—Microscopical sections were made of the carpels of medicinal

celery seed and compared in detail with the structure of the domestic celery seed. The medicinal celery seed usually contains more than six oil ducts in each carpel while the domestic was never found to have more than six.

Chloroform.—Four samples were rejected on account of the presence of chlorinated products.

Copper Carbonate.—An analysis of a sample of commercial Copper Carbonate was made with the following results:

Solution in hydrochloric acid.....	Complete
Sulphates	Considerable present
Strength computed as metallic copper.....	50.2%
Strength computed as copper oxide (CuO).....	62.83%

The theoretical percent of metallic copper in the normal copper carbonate (CuCO_3) is 51.4% and in the basic Copper Carbonate ($\text{Cu}_2(\text{OH})_2\text{CO}_3$) is 57.5%.

Cacao Butter Substitute.—This product, known as Vegetable Cacao Butter, has recently been quoted. It is labeled as hard palm kernel fat with cocoa flavor.

	Grade No. 1	Grade No. 2	Grade No. 3
Physical Appearance.....	Yellowish white	Yellowish white	White
Melting Point.....	30.5°C	31.5°C	32.5°C
Specific Gravity at 25° C.....	0.8976	0.890	0.915
Acid Number.....	4.9	1.08	1.2
Saponification Number.....	256.0	253.0	258.3
Iodine Value.....	8.995	7.95	5.21

By comparing the above data with the specifications for Cacao Butter given by the U. S. P. it may be seen that all of the samples above have higher saponification numbers and lower specific gravities and iodine values than U. S. P. permits.

The U. S. P. requires the saponification value to be between 188 and 195, the specific gravity at 25° C. from 0.970 to 0.976 and the iodine value not less than 33 nor more than 38.

The odors of grades number one and number two are very similar to genuine cacao butter, but grade number three has practically no odor.

The taste of all samples resembles that of cacao butter but is somewhat different. It would probably be difficult to detect grades number one and number two without a chemical analysis. Undoubtedly this material could be used as an adulterant of cacao butter, but owing to the considerable variation in specific gravity, saponification value and iodine value a small admixture could be detected.

Disinfectants.—The scientific standardization of disinfectants has now become a possibility through the use of the Rideal-Walker Method, and not only can the relative merits of disinfectants be accurately stated, but disinfectants may be standardized under a variety of conditions and the best product for a specific purpose ascertained.

Digitalis Leaves.—One sample was tested which was not sufficiently active physiologically. 0.23 gm. of the drug was required to kill a 250 gm. guinea pig.

Ergot.—One solid extract, three powdered extracts, two fluid extracts, a sample of Ergotin Bonjean and an active extract of this drug were found which would not raise the blood pressure of a dog nor darken the comb of a rooster.

Glycerin.—Two samples were rejected on account of their yellow color and excess of butyric acid.

Goose Grease.—One sample was rejected on account of its rancid odor, objectionable deposit and an excessive (7.14) acid number.

Gambir Cubes.—The U. S. P. states that Gambir should contain at least 70% of material soluble in alcohol and that when incinerated it should leave not more than 5% of ash. The five samples examined contained the following proportions of alcohol soluble matter and ash:

	Soluble in Alcohol	Ash
Sample No. 1.....	78.5%	5.2%
Sample No. 2.....	82.8%	4.6%
Sample No. 3.....	80.2%	5.2%
Sample No. 4.....	82.0%	3.7%
Sample No. 5.....	77.6%	4.9%

Honey.—One sample was found which was evidently adulterated with cane sugar.

Indian Gum.—This gum is no doubt used even at the present time as an adulterant of tragacanth and has to some extent replaced tragacanth. Nine samples of Indian gum were compared and the mucilages made from them were found to vary considerably both in color and consistency. A good sample of Indian gum will form a stiff jelly with 50 parts of water, and the jelly is not very much darker than a similar jelly made with tragacanth.

Ferrous Lactate.—Two samples were compared. Both samples contained excessive amounts of sulphates, were not completely soluble in forty parts of water and left excessive residue on ignition.

Japanese Hemp Seed.—The sample examined was somewhat smaller and lighter in color than the ordinary variety.

Vienna Lime.—One sample was analyzed with the following results:

Physical Appearance	Yellowish white powder
Silica (SiO_2).....	0.75%
Iron and Aluminum Oxides (Fe_2O_3 , Al_2O_3).....	0.75%
Calcium Oxide (CaO).....	61.47%
Magnesium Oxide (MgO).....	36.75%

Leptandrin.—Two samples were examined with the following results:

	Alcohol Soluble	Ash
Sample No. 1.....	79.95%	3.1%
Sample No. 2.....	94.13%	1.175%

Mercuric Chloride.—One sample was found which was dark in appearance.

Magnesium Sulphate.—The U. S. P. states that this salt must be 99.7% pure, but gives no tests for limit of chlorides. When the chlorides are estimated in many samples of commercial magnesium sulphate the amount of chlorides present computed as magnesium chloride amount to over 0.3%, hence these products cannot be of U. S. P. quality.

Peppermint.—A sample of peppermint leaves and one of peppermint herb were examined which contained spearmint leaves and spearmint herb respectively.

Olive Oil.—When the government permitted olive oil to be imported duty free, after being denatured with 8 ounces of oil of rosemary to each barrel, the quality of the second grade of olive oil, which had previously been used for lubricating purposes, was denatured, and the quality of the lubricating oils became lower. This may have resulted from various causes, such as the fact that 8 ounces of oil of rosemary in each barrel could scarcely be detected and the denatured olive oil could no doubt be used in many cases in place of the

duty paid oil. At any rate the acid numbers of the commercial lubricating olive oils were higher than before. Previously the acid numbers were approximately 10 to 15, but samples were found during the past year which had acid numbers as follows: 31.2, 31.0, 27.7, 27.7, 31.0 and 40.1. Lots were obtained however after some difficulty which were equal in quality to those obtained in former years.

Oil of Citronella. The geraniol content of three lots was estimated with the following results: 49.2%, 52.7% and 56%.

Oil of Cajuput.—Traces of copper were found in both samples examined, and one sample had an optical rotation of $-3^{\circ} 21'$, which is over one degree greater than the U. S. P. allows. It is stated that authentic samples have an optical rotation up to $-3^{\circ} 40'$.

Cottonseed Oil.—One sample had a saponification number of 188 and an iodine number of 109.

Oil of Turpentine.—The quality of this commodity has greatly improved during the past year but many samples are not colorless as the Pharmacopœia demands. Until the price is dependant upon the amount of color present we cannot expect to uniformly obtain commercially a colorless product.

Oil of Wintergreen.—One lot was rejected on account of the probable addition of synthetic methyl salicylate.

Oil of Sweet Almond.—One sample was examined which had the following characteristics:

Specific Gravity at 25°C	0.9161
Acid Number	1.98
Saponification Number	194.8
Iodine Number	110.27
Bromine Number	63.0
U. S. P. Nitric Acid Test.....	Abnormal
Olive, Arachis, Cottonseed, Sesame and other fixed oils.....	Negative
Bielier's Test	Abnormal
Nitric Acid Test (A. J. P. 1886, page 408).....	Abnormal
Congeaing Point of fatty acids.....	0°C
Melting Point of mixed fatty acids.....	$+2^{\circ}\text{C}$

This oil did not conform to U. S. P. specifications in several respects and we considered that it contained apricot kernel oil.

Oil of Pennyroyal.—Six samples were examined with the following results:

	Specific Gravity at 25°C	Optical Rotation at 25°C	Solubility in 70% Alcohol
Sample No. 1.....	0.9197	$+30^{\circ} 14'$	In 0.7 parts
Sample No. 2.....	0.9242	$+27^{\circ} 44'$	In 0.7 parts
Sample No. 3.....	0.9196	$+29^{\circ} 40'$	In 0.7 parts
Sample No. 4.....	0.9218	$+28^{\circ} 29'$	In 0.8 parts
Sample No. 5.....	0.9222	$+25^{\circ}$	In 0.8 parts
Sample No. 6.....	0.9195	$+24^{\circ} 58'$	In 0.8 parts

Poppy Seed Oil.—One sample was examined which would not dissolve in 100 volumes of cold alcohol. Although Lewkowitsch states that poppy seed oil should be soluble in 25 volumes of cold alcohol and six volumes of boiling alcohol, we have never examined an oil that would conform with these specifications.

Lard Oil.—One sample was found which had an iodine value of 81.67. The U. S. P. states that lard oil should have an iodine value of not less than 56 nor more than 74.

Rennin.—One sample, labeled "Free from salt," was examined for chlorides. A considerable quantity was found.

Resorcinol.—This product frequently has a slight pink cast which may gradually become darker. One lot was rejected on account of its inferior appearance.

Resin of Jalap.—One sample was examined which contained 3.8% of moisture and did not strictly fulfill the U. S. P. specifications for limit of saponifiable substances.

Rosin Oil.—Two samples were examined with the following results:

	Sample A	Sample B
Color	Dark reddish brown	Reddish brown
Specific Gravity at 25°C.....	0.989	0.9043
Acid Number	56.37	41.37
Saponification Number	69.85	56.94
Ester Number	13.48	15.57
Iodine Number	84.3	41.6
Unsaponifiable matter	59.8%	73.9%

We considered that Sample B was adulterated with mineral oil.

Resin of Scammony.—Four samples were examined with the following results:

	No. 1	No. 2	No. 3	No. 4
Proportion soluble in alcohol.....	98.85%	98.65%	99.25%	99.1%
Proportion soluble in ether.....	99.55%	98.25%	55.54%	55.41%
Proportion soluble in turpentine.....	Insoluble	Insoluble	Insoluble	Insoluble
Appearance of NaOH solution.....	Cloudy	Cloudy	Cloudy	Cloudy
Appearance of NaOH solution after adding acid	Cloudy	Cloudy	Cloudy	Cloudy
Acid Number	17.7	18.5		
Ester Number	224.1	209.0		
Saponification Number	241.8	227.5		
Sulphuric Acid Test (A. J. P. April 6-1912)	Normal	Normal	Abnormal	Abnormal

We considered samples No. 3 and No. 4 of inferior quality probably prepared from Mexican Scammony.

Fluidextract of Sanguinaria.—One sample was assayed which contained only 1.8 gm. of alkaloids in 100 cc.

Spigelia.—One lot was examined which contained roots of seven different plants, however most of the sample consisted of *spigelia marilandica*.

Sodium Bromide.—One sample was rejected on account of an excessive amount of bromate present.

Saffron.—Several samples were examined which would not conform to 1890 U. S. P. test for absence of coal tar colors.

Purified Talc.—One sample was examined which lost 6.1% on ignition. The loss was due mainly to the presence of carbonates.

Venice Turpentine, Artificial.—Three samples were examined with the following results:

	No. 1	No. 2	No. 3
Acid Number	106.8	118.0	127.7
Ester Number	21.2	16.0	18.1
Saponification Number	128.0	134.0	145.8

Wild Cherry Bark.—Two lots were rejected because the bark failed to conform with the U. S. P. description. Most of the barks on the market are too thick and old.

I desire to express my indebtedness to my co-workers, J. G. Roberts, H. M. Sechler, M. Becker and R. I. Grantham for much of the analytical work connected with the above contribution.—ANALYTICAL DEPARTMENT, SMITH, KLINE & FRENCH CO., JUNE 12, 1912.

PURITY OF CHEMICALS AND DRUGS.

H. ENGELHARDT, BALTIMORE, MD.

During the year between June 1, 1911, and May 31, 1912, about seven thousand shipments of chemicals were examined. As I have pointed out on a previous occasion, the Pure Food and Drugs Act has exerted a very beneficial influence on the drug market, inasmuch as only a very few lots were found which were unfit for use. Not one lot was received which was greatly adulterated; those chemicals which were rejected being carelessly manufactured.

A lot of *Sodium Hydroxide* assayed far below 90 percent of absolute hydroxide, and contained an appreciable amount of carbonate.

A large shipment of *Powdered Opium* contained less than 12 percent of crystallized morphine.

A shipment of *Milk Sugar* contained an undue amount of cane sugar, when tested according to the U. S. P. even by keeping the temperature of the mixture of dilute alcohol and sugar below 15° C.

Potassium Carbonate. One lot assayed only 94.5 percent.

Beechwood Creosote. Several lots were received which possessed an odor recalling that of carbon disulphide.

Gold and Sodium Chloride. Two lots assayed only 22 percent of metallic gold.

Nitroglycerin Solution. One lot which assayed only 8 percent of nitroglycerin instead of 10 percent had to be rejected. In connection with this article and *Spirit of Nitroglycerin* it may be said that rather accurate results are obtained by allowing 5 cc. of the solution to evaporate spontaneously and drying the residue in a desiccator over sulphuric acid to a constant weight. The results thus obtained compare favorably with those obtained by the colorimetric methods with phenoldisulphonic acid or naphthylamine. The requirements for *Spirit of Nitroglycerin* given in the U. S. P. should be changed. The specific gravity of a one percent solution is about 0.817 at 25° C., and 10 cc. of the solution, when cooled at 15° C. and mixed with 11 cc. of distilled water of the same temperature should show a faint opalescence, and on the addition of 1 cc. more of water should exhibit a turbidity.

Calcium Glycerophosphate. Considerable trouble was experienced with this salt. Although both by incineration and titration it could be shown that the salt was free from di- and tri-phosphoric acid ester, it possessed peculiar physical properties, which rendered it insoluble in 30 parts of water. When brought in contact with water insufficient for solution, the salt caked and did not retain its granular form. We are still engaged in an investigation of this salt, and we hope to report on this article at an early date.

Various other shipments of drugs had to be rejected for minor reasons, but in general, as mentioned before, the chemicals were entirely satisfactory.

Less satisfactory were the vegetable drugs submitted to us, as may be seen from the following:

Aconite Root. Of eleven samples examined, five assayed below 0.5 percent of ether-soluble alkaloids. The variation in alkaloidal strength was from 0.39 to 1.0 percent.

Asafetida. Twenty-four samples were examined. Eight of these contained less than 50 percent alcohol-soluble matter and in ten the ash exceeded 30 percent. The following results were obtained:

Alcohol Soluble Matter	Ash	Alcohol Soluble Matter	Ash
66.6	32.0	77.5	15.3
74.8	6.2	56.6	33.0
67.6	1.4	75.3	4.9
48.1	22.6	40.8	42.2
48.9	39.3	71.9	14.1
49.0	30.5	51.0	40.0
79.8	3.0	80.0	8.0
40.0	43.1	50.0	58.0
70.0	8.7	69.5	16.0
72.3	9.6	56.3	7.0
57.8	24.0	42.7	36.0
30.8	50.0	33.0	45.3

Belladonna Leaves. None of the samples examined were below U. S. P. strength. The percentage of alkaloids ranged between 0.36 and 0.60 percent.

Belladonna Root. Eleven out of twenty-six samples were deficient in alkaloids. The standard for this drug should be retained at 0.45 percent or even be reduced to 0.4 percent.

Benzoin. Ten out of sixteen samples of this item contained less than 80 percent alcohol-soluble matter, but all samples yielded on incineration less than 2 percent of ash.

Black Pepper. Four samples yielded on extraction 10.6, 12.5, 9.2 and 11 percent, respectively, of oleoresin.

Calabar Bean. Only two out of four samples came up to the required 0.15 percent of ether-soluble alkaloids, when assayed by the U. S. P. method. The latter should be modified by allowing the alkaline liquid to be shaken with ether (about ten times) until the alkaloids are completely extracted.

Capsicum. Six samples yielded 13.1, 14.8, 15.26, 15.8, 11.3 and 11.0 percent of oleoresin, respectively.

Cinchona Calisaya and Red Cinchona. All twenty-seven samples came up fully to the required strength.

Coca. The samples submitted (eight) were of good quality, some assaying 1 percent and more of ether-soluble alkaloids.

Colchicum Root. Of eighteen samples, six were below U. S. P. strength, and of

Colchicum Sced two samples out of six were deficient in colchicine, when examined by the unreliable official method.

Cubeb. The percentage of oleoresin varied from 18 to 25 percent.

Ergot. Fourteen samples out of forty-five had to be rejected partly on account of being deficient in cornutine and partly because they were in a moist and mouldy condition.

Golden Seal. One sample assayed only 1.5 percent of hydrastine, while eight other samples assayed higher than the U. S. P. requires. Some contained 3.5 percent and more of hydrastine.

Guaiac. Thirteen samples were examined. Two contained less than 85 percent of alcohol soluble matter, and in four the ash exceeded 4 percent.

Guarana. Four samples assayed 4.2, 4.28, 4.5 and 3.9 percent respectively of caffeine.

Gamboge. All six samples were of good quality.

Ginger. The percentage of oleoresin in Jamaica ginger varied from 2.81 to 5.24 percent. Eight samples were tested.

Henbane. We were compelled to reject seventeen out of thirty samples because they were deficient in mydriatic alkaloids. The standard for this drug should be reduced to 0.07 percent.

Ipecac. Both the Carthagena and Rio varieties were of fairly good quality. Five samples out of twenty-eight of the former and one sample out of eight of the latter were rejected.

Jalap. During the year previous to the last the samples of Jalap were of much better quality than those received during the latter period. Although we had no difficulty in obtaining a drug with 10 percent and more of resin, some samples even containing as much as 15 and 20 percent, many samples of poor quality were offered. We were compelled to reject seventeen out of thirty-seven samples or almost 50 percent. Some of these assayed below 5 percent of resin.

Kola. Seven samples out of twenty-one contained less than 1.5 percent of caffeine.

Kino. The solubilities of six samples of kino were the following:

Boiling Water	Alcohol
79.4	14.5
97.4	89.4
95.3	82.8
91.6	39.1
98.8	65.5
89.5	86.1

Lupulin. Twelve samples were examined. Eight contained below 60 percent of ether-soluble matter and eleven yielded on incineration more than 10 percent of ash. The latter in some of the samples amounted to 35 percent.

Myrrh. Of six samples of myrrh, the solubility in alcohol varied between 26.0 and 40.73 percent. On incineration, ash was obtained which varied between 4.56 and 11.9 percent.

Nux Vomica. All samples complied with the official requirements.

Opium. Thirty-two cases of opium were examined. The percentage of crystallized morphine averaged about 11.0 percent.

Parsley Seed. Three samples yielded 14.7, 11.4 and 13.04 percent, respectively, of oleoresin.

Strophanthus. All the samples examined were Kombé seed and contained more than six percent of strophanthin.

Stramonium. Eight samples were examined and were found to be of good quality. Some assaying nearly 0.5 percent of mydriatic alkaloids. There was no good reason for reducing the standard of this drug.

Section on Pharmacopoeias and Formularies

Papers Presented at the Sixtieth Annual Convention

REPORT OF COMMITTEE ON NATIONAL FORMULARY.*

C. LEWIS DIEHL, CHAIRMAN, LOUISVILLE, KY.

The Committee on National Formulary have the pleasure to report that in so far as the revision of formulas now in the National Formulary, as well as the new formulas that have been accepted for inclusion in the N. F. IV are concerned, the work is practically completed. We are now ready to prepare mimeograph copies and to submit to the Council the formulas of the text, with very few exceptions, if the Association decides to publish the work without further delay.

In this case, however, it will be impracticable to give as complete a description, definition, and test of identity and quality for the drugs prescribed in the formulas which now have no U. S. P. standard, and this is considered desirable by our Committee since the Book is recognized under the provisions of the Food and Drugs Act of June 30, 1906. With immediate publication it will become necessary to confine these descriptions, in the revised edition, to the simple definition of the source and quality (kind) of drug or chemical, without giving tests to serve as standards.

This will probably comply with the letter of the law, inasmuch as the correct scientific title and common name, the botanical derivation and part used, if of vegetable origin, or the chemical formula, derivation and state of aggregation, if of mineral origin would seem to adequately establish the identity of the substance in question.

Nevertheless, this expedient should be adopted only tentatively, and only if the Association directs that the book be published without further delay, and then the successors of the present revision committee of the National Formulary should be appointed with the understanding that they shall vigorously continue in the endeavor, inaugurated by their predecessors, to provide suitable monographs for all articles for which no official standard is given, so that, when completed, it may be published as a supplement to the present revision, or may form the basis for a fifth revised edition.

However, it has lately been suggested that inasmuch as the completion of the National Formulary revision will come only a short time before the appearance of the U. S. P. IX, it might be opportune to issue the two National Standards—the U. S. P. and the N. F.—simultaneously. The advocates of this measure have pointed out a number of advantages resulting from the simultaneous preparation and publication of the two books as authoritative standards; the most im-

* Presented at the Joint Session of the Committees on United States Pharmacopoeia and National Formulary at the Denver Meeting, August, 1912.

portant being that the two standards could be made to harmonize and would therefore contain no conflicting formulas or tests. Those opposed (although in the minority) have advanced good reasons why this should not be done—chiefly the undesirability of delay. A simultaneous appearance of the two books seemed to have preference in the opinion of a large majority of the members, and when it was brought to a vote the Committee decided to recommend to the Association the postponement of the publication of the N. F. IV, until the revision of the U. S. P. IX also is completed in all its essential details.

One of the important arguments brought to bear on this decision was that the delay would enable the Committee to provide satisfactory monographs for the drugs and chemicals prescribed in the formulas, which will not be included by the Pharmacopœia, thus satisfying in every particular the requirements of the book under the provisions of the National Food and Drugs Act.

In this connection it should be stated that the Chairman of the Committee on Unofficial Standards (Mr. Beringer), in a recent communication to this Committee, has expressed his personal opinion to the effect:

"that when the publication of the N. F. has progressed to the point where the manuscript for Part 2 will be necessary, the work will be sufficiently well in hand to proceed without material delay."

However, as the proposed simultaneous appearance of the U. S. P. and N. F. will offer many advantages to both books and to the users of the books, and as the revision of the U. S. P. is proceeding rapidly, and will therefore occasion very little delay in the appearance of the N. F. IV, we recommend that the plan of simultaneous appearance be approved by the Association, and that the N. F. Committee of Revision be authorized to cooperate with the U. S. P. Committee of Revision in preventing duplication of formulas or conflicting statements, requirements, or tests in the two official standards.

In fine, to recapitulate:

"We are prepared to supply the manuscript of the introductory chapters and formulas for a revised edition of the National Formulary, which, with a few exceptions, are now ready for mimeographing, while the exceptions are in advanced conditions, so that they will not occasion delay if immediate publication is decided."

"The preparation of standards and tests for articles not official in the U. S. P. is not sufficiently advanced to formulate the monographs for inclusion as Part II of the National Formulary, if it is decided to publish at once, and the Committee do not consider it wise to establish standards for some articles and to omit them from others."

"We therefore recommend that, if it is declined to publish the N. F. at once, a simple description, sufficient to establish identity, be given "tentatively" for all articles mentioned in Part II—to be supplanted in due course by monographs establishing carefully formulated standards and tests."

"For these considerations, and other obvious advantages, we recommend postponement of the publication of the N. F. IV, until it can be issued simultaneously with the U. S. P. IX: this plan, in all probability, affording the time necessary for preparing properly formulated standards and tests for all the articles mentioned in Part II, and serving to so complete the present revision."

For general information a brief statement of the present status of the work

accomplished is appended to this report, together with several exhibits, outlining in greater detail the work that remains to be done.

Now, personally addressing the Association in conclusion, the Chairman deplores his inability to attend the meeting at Denver. After an experience of two visits to Denver and vicinity—the one in 1895, the other in 1907, he is convinced that the unaccustomed high altitude and the necessarily strenuous exertion during the meeting would make it imprudent to repeat an experience which, particularly in 1907, came near to ending disastrously. He regrets this the more, because aside of denying himself the great pleasure of meeting his friends and associates, he is prevented from consulting with the members of his Committee on important questions still in abeyance. He feels confident, however, that the members of the N. F. Committee present at Denver will hold a conference and will supplement this report by such additional recommendations as may seem to them expedient in furtherance of the betterment of the book as a National Standard of Authority.

ADDENDUM TO REPORT ON THE NATIONAL FORMULARY.

SUMMARY OF THE PRESENT STATUS OF THE REVISION.

(To August 10, 1912.)

As recorded in the Bulletins of the N. F. Committee and from individual reports made to the chairman.

(Under the term "Article" are included both the formulas for the preparations and the introductory or explanatory chapters in the N. F. and "Appendix.")

Number of articles in the N. F. III.....	501	
Number of articles in the "Appendix".....	115	
Total number of articles between the covers of the book.....		617
Articles dismissed from the N. F. III.....	96	
Articles rejected from the "Appendix".....	60	
Total number of articles dismissed or rejected.....		156
Articles retained from the N. F. III in N. F. IV.....	405	
Articles admitted from "Appendix".....	56	
Total number retained and admitted from the N. F. III and "Appendix".....		461
New articles admitted in N. F. IV.....		107
Total number of articles to be included in Part I of the N. F. IV.....		568

MONOGRAPHS OF STANDARDS FOR PART II.

Number of monographs published in the "Journal".....	61	
Number still to be formulated.....	132	
Total number (of which 63 for the additions) required.....		193

COLOR STANDARDS, ETC.

The referees have submitted for review by Sub-Committee "C" the text, with their approval, for nearly all of the 568 articles accepted for inclusion in Part I of the N. F. IV; the only exceptions of importance being the Color Standards, necessary as a basis upon which the formulas for Tincture of Cudbear, Compound Tincture of Cudbear, and Tincture of Caramel can be constructed; and a chapter on Sterilization is also as yet in a tentative form, awaiting a conference with the Committee of Revision of the U. S. P. in order to harmonize the texts for the two standards. As to the Color Standards, the Chairman of the Special Committee (Mr. Army), reports that he will present a paper at the annual meeting which will, in his opinion, satisfactorily solve the problem.

In further explanation of what remains to be done to complete the revision, the following "Exhibits," itemizing the articles that were reported as not ready August 9, 1912, and those

articles that have been since reported in Bulletin No. 48 (August 10, 1912,) as being practically ready, are herewith appended.

EXHIBIT I.

Articles referred to Committee "C" not submitted to Committee "D," as reported by Mr. Cook, August 9, 1912.

a. Preparations from the N. F. III:

The following fluidextracts:

139 Adonidis	152 Convallariae (flor)	164 Juniperi
140 Aletridis	153 Coptis	165 Kavac
141 Angelicae Rad.	154 Cornus	168 Petroselin Rad.
142 Apii Grav.	156 Corydalis	170 Sterculiae
143 Aralia Racemosae	157 Coto	171 Stillingiae Co
144 Arnicae Flor	158 Fuci	172 Trillii
145 Boldi	159 Helianthemi	173 Turnerae
146 Buchu Comp.	160 Humuli	175 Verbasci
147 Calendulae	161 Hydrangeae	176 Verbenae
149 Caulophylli	162 Jalapae	177 Zeae
150 Coffeae Tostae	163 Juglandis	

NOTE: The referee, Mr. Beringer, submitted the above formulas with his approval, based upon careful preparation.

b. New Preparations:

1 Fluidextract of Baptisia.	8 Fluidextract of Echinacea.
2 Fluidextract of Chionanthus.	9 Fluidextract of Euphorbia Pilulifera.
3 Fluidextract of Cinchona, Aqueous.	10 Fluidextract of Helonias.
4 Fluidextract of Condurango.	11 Fluidextract of Cataria (Nepeta.)
5 Fluidextract of Cocillana.	12 Fluidextract of Senecio.
6 Fluidextract of Dioscorea.	13 Fluidextract of Trifolium.
7 Fluidextract of Drosera.	

NOTE: In N. F. Bulletin No. 48, p. 652-65, Mr. Beringer makes a supplementary report as referee, in which he meets some of the adverse criticisms that have apparently prevented action on some of the fluidextracts above mentioned, namely (by number) 1, 2, 4 and 6 to 13 inclusive.

EXHIBIT II.

Articles for which text is not completed yet by Committee "D," reported as unsettled by Mr. Cook, August 9, 1912.

a. Preparations from N. F. III:

- 1-44 Elix. Cinch. Iron & Calc. Lactophos. (Ra to supply formula.)
- 2-110 Emplast. Aromat.
- 3-203 Liquor Alumini Acetatis.
- 4-220 Liquor Ferri Oxylchloridi.
- 5-462 Tinct. Persionis.
- 6-463 Tinct. Persionis Comp.

b. New Preparations:

- 1 Elixir of Formates.
- 2 Solution of Aluminum Acet., Crude (Burrow's Solution.)
- 3 Solution of the Bromides of Gold, Arsenic and Mercury.
- 4 Solution of Hydrastine Compound.
- 5 Syrup of Ammonium Hypophosphite.
- 6 Syrup of Quinine with Chocolate.
- 7 Sterilization (General Article.)
- 8 Tincture of Caramel.
- 9 Ferri Oxidum Saccharatum. (Ra to supply formula.)
- 10 Spice Poultice (Pulvis Aromaticus Rubefacius.)
- 11 Extract of Aconite Leaves
- 12 Extract of Conium
- 13 Extract of Ignatia
- 14 Fluidextract of Galega.
- 15 Fluidextract of Solanum.
- 16 Fluidextract of Thuja.
- 17 Fluidextract of Thyme.

} if these shall be necessary.

EXHIBIT III.

The following is an outline of the report on the progress of the work done by the Committee on Unofficial Standards in connection with the definitions of standards for articles included in N. F. formulas and not described in the U. S. P.

The number before the name of the article indicates the number of the N. F. formula in which the article is used, while the numbers after the names refer to the pages of the Journal of the American Pharmaceutical Association or to the pages of the Circular Letters to the Committee on Unofficial Standards on which the article is described or discussed.

Articles without a number preceding them are either included in proposed additions to the N. F. or are being discussed by the Committee on Unofficial Standards for other reasons. All of the articles that have been published in the Journal of the American Pharmaceutical Association are available for inclusion in the N. F. at this time in compliance with the rule adopted by the Council at the Boston meeting.

The articles to which no page numbers are appended have, as yet, not been discussed by the Committee on Unofficial Standards.

N. F. No.

- 491 Absinthium. J. A. Ph. A. 1912, p. 67.
- 320 Aconite Leaves. J. A. Ph. A. 1912, p. 67.
- 321 Adonis. J. A. Ph. A. 1912, p. 67.
- 139 Albumen
- 217 Dried Blood Albumen. Circulars, 225, 244, 312.
- Dried Egg Albumen. Circulars, 225, 244, 313.
- 140 Aletris. Circulars, pp. 210, 236, 308.
- 374 Althaea Leaves. J. A. Ph. A. 1912, p. 68.
- Ammoniacum. Circulars, pp. 211, 237.
- Ammonium Hypophosphite. J. A. Ph. A. 1912, p. 68.
- 297 Ammonium Ichthyol Sulphonate. Circulars, pp. 252, 271, 319.
- Ammonium Phosphate. Circulars, p. 290.
- 27 Anethol. J. A. Ph. A. 1912, p. 69.
- 8
- 141 Angelica Root. J. A. Ph. A. 1912, p. 69.
- 323 Angelica Seed. J. A. Ph. A. 1912, p. 69.
- 576 Antimony Oxide.
- 505 Antimony Sulphide. Circulars, pp. 255, 272, 319.
- 130 Apples, Ripe Sour.
- 143 Aralia Racemosa. Circulars, p. 299.
- 444 Areca. J. A. Ph. A. 1912, p. 70.
- Arnica Root. J. A. Ph. A. 1912, p. 70.
- 395 Asarum Root. Circulars, p. 300.
- 213 Asclepias. J. A. Ph. A. 1912, p. 70.
- 427 Balm of Gilead Buds.
- Baptisia.
- Barium Peroxide. Circulars, pp. 211, 224, 243, 312.
- 355 Bayberry Root Bark. Circulars, p. 307.
- 139 Birdseye Root.
- 20 97 Blackberry Juice.
- 431
- 97 Blackberry Root.
- 145 Boldo. J. A. Ph. A. 1912, p. 71.
- Bone Ash.
- 209 Bromauric Acid. J. A. Ph. A. 1912, p. 71.
- Bryonia. Circulars, p. 302.
- 429 Buckthorn Berry Juice (Fermented.)
- 520 Burgundy Pitch.
- 307 Cacao Preparata. J. A. Ph. A. 1912, p. 71.
- Cactus Grandiflorus. J. A. Ph. A. 1912, p. 71.
- 484 Calamina. Circulars, pp. 226, 245, 270, 315.
- 69 Calcium Glycerophosphate.
- 36 Calcium Lactate. J. A. Ph. A. 1912, p. 71.
- Calcium Peroxide. J. A. Ph. A. 1912, p. 72.
- 343 Canella Alba. J. A. Ph. A. 1912, p. 161.
- 461 Caramel.
- 213 Carmine. Circulars, pp. 256, 273, 319.

N. F. No.

- 191 Cascarella. J. A. Ph. A. 1912, p. 162.
 Cataria.
 235 Catechu.
 149 Caulophyllum. J. A. Ph. A. 1912, p. 162.
 142 Celery Seed. J. A. Ph. A. 1912, p. 162.
 441 Centaurium. J. A. Ph. A. 1912, p. 162.
 Cetraria. J. A. Ph. A. 1912, p. 162.
 214 Chestnut Leaves. Circulars, p. 303.
 Chionanthus.
 Chocolate.
 Coal Tar. J. A. Ph. A. 1912, p. 163.
 Cocculus Indicus. J. A. Ph. A. 1912, p. 163.
 Cocillana. Circulars, p. 305.
 151 Coffee, Green.
 150 165 Coffee, Roasted. Circulars, pp. 227, 245, 282, 316.
 376 Coltsfoot Leaves. Circulars, p. 307.
 Condurango. J. A. Ph. A. 1912, p. 163.
 152 Convallaria Flowers. J. A. Ph. A. 1912, p. 163.
 153 Coptis. Circulars, p. 205.
 154 Cornus.
 155 Cornus circinata.
 156 Corydalis.
 157 449 Coto Bark.
 462 463 Cudbear. J. A. Ph. A. 1912, p. 163.
 192 Cumarin. Circulars, pp. 256, 273, 320.
 173 Damiana. Circulars, p. 306.
 286 296 Dextrin. Circulars, pp. 228, 246, 271, 316.
 390 392 Dextrin, White. Circulars, pp. 228, 316.
 106 Diacetyl Morphine. J. A. Ph. A. 1912, p. 164.
 Diacetyl Morphine Hydrochloride. J. A. Ph. A. 1912, p. 164.
 52 357 Diastase.
 476 Dioscorea.
 Dogwood Bark. J. A. Ph. A. 1912, p. 164.
 Drosera. J. A. Ph. A. 1912, p. 165.
 544 Dulcamara. Circulars, p. 306.
 Echinacea. J. A. Ph. A. 1912, p. 165.
 200 Eggs, Fresh.
 217 Eggs, Yolk of.
 375 Elder Flowers.
 323 444 Elicampane.
 Eucalyptus Gum.
 Euphorbia Pilulifera. J. A. Ph. A. 1912, p. 165.
 320 321 Extract of Aconite Leaves.
 492 Extract of Beef.
 321 Extract of Conium.
 321 Extract of Ignatia.
 Foenugreek. J. A. Ph. A. 1912, p. 165.
 377 Formic Acid. J. A. Ph. A. 1912, p. 166.
 Formic Acid, Concentrated. J. A. Ph. A. 1912, p. 166.
 158 Fucus. J. A. Ph. A. 1912, p. 166.
 446 Galangal. J. A. Ph. A. 1912, p. 167.
 Galbanum.
 Galega.
 593 Garlic.
 209 Gold Leaf.
 513 Guaiac Wood. J. A. Ph. A. 1912, p. 167.
 561 Gutta Percha. Circulars, p. 294.
 Helonias. J. A. Ph. A. 1912, p. 167.
 159 Helianthemum.
 161 Hydrangia.
 Hydrastine Hydrochloride. Circulars, pp. 258, 273, 321.
 Ignatia. J. A. Ph. A. 1912, p. 167.
 302 Infusorial Earth. Circulars, pp. 229, 247, 270, 316, 317.
 50 171 Iris. Circulars, pp. 212, 237.
 Iron Glycerophosphate. Circulars, pp. 257, 274, 320.
 57 Iron Lactate. J. A. Ph. A. 1912, p. 252.
 413 Iron Oxide Saccharated

N. F. No.

- 223 Iron Peptonate. Circulars, pp. 230, 283.
 Iron Peptonate, Stronger. Circulars, p. 284.
 Iron and Manganous Oxides with Peptone. Circulars, p. 286.
 Iron and Manganous Oxides with Peptone, Stronger. Circulars, p. 288.
- 128 Jamaica Rum.
- 163 Juglans.
- 146 164 Juniper.
- 165 Kava Kava. J. A. Ph. A. 1912, p. 253.
- 308 Keratin.
- 170 Kola. J. A. Ph. A. 1912, p. 253.
 Kola Recens. J. A. Ph. A. 1912, p. 253.
- 221 239 Lead Carbonate. Circulars, pp. 230, 248, 271, 318.
- 111 Lead Oxide.
- Lead Oxide, Red. Circulars, p. 291.
- 388 Lime Juice.
- Mace. Circulars, p. 297.
- Magnesium Chloride. P. 292.
- 369 370 Magnesium Sulphate Anhydrous. J. A. Ph. A. 1912, p. 253.
- 374 Mallow Leaves.
- 233 Manganese and Sodium Citrate. Circulars, pp. 212, 238, 309.
- Manganese Glycerophosphate. Circulars, pp. 259, 274.
- 223 Manganese Peptonate. Circulars, p. 285.
- 374 Melilot Tops.
- Menispermum. Circulars, pp. 214, 240, 311.
- 167 491 Menyanthes.
- 281 313 Molasses.
- 376 Mullein Flowers.
- Mullein Leaves. J. A. Ph. A. 1912, p. 254.
- Oil of Cardamom. J. A. Ph. A. 1912, p. 254.
- 460 Papaveris. J. A. Ph. A. 1912, p. 254.
- 449 Para-coto Bark. J. A. Ph. A. 1912, p. 254.
- 168 Parsley Root.
- 222 Peptone, Dry.
- Phenolphthalein. J. A. Ph. A. 1912, p. 254.
- Physiological Salt Solution.
- 464 Pimpinella.
- Potassium Glycerophosphate. J. A. Ph. A. 1912, p. 255.
- 52 253 Pumice.
- 213 Quebracho. Circulars, pp. 215, 241, 311.
- 565 Quince Seed. J. A. Ph. A. 1912, p. 255.
- 428 Quinidine. Circulars, pp. 216, 242, 277, 278, 312.
- Quinine Glycerophosphate. Circulars, pp. 260, 275.
- Quinine Hypophosphite. Circulars, pp. 262, 276.
- Quinine Tannate. Circulars, pp. 263, 276.
- 92 Quinine Valerate.
- 231 Raspberries, Fresh.
- 243 Rennin.
- Rhamnus Catharticus. J. A. Ph. A. 1912, p. 255.
- 215 Rumex.
- 323 444 Saffron. J. A. Ph. A. 1912, p. 256.
- 477 Salep. J. A. Ph. A. 1912, p. 256.
- 171 Sambucus.
- Sherry Wine. J. A. Ph. A. 1912, p. 256.
- 307 Silver Foil.
- 571 577 Sodium Carbonate.
- 215 Sodium Dichromate.
- 69 Sodium Glycerophosphate. Circulars, pp. 231, 248, 268, 318.
- Solanum.
- 386 387 Sponge.
- Strontium Arsenite. J. A. Ph. A. 1912, p. 257.
- 250 Strychnine Acetate.
- Strychnine Glycerophosphate. Circulars, pp. 264, 276.
- 102 Strychnine Valerate.
- 486 Suet.
- 570 Sulphurated Antimony.

N. F. No.

- 148 Thea. Circulars, pp. 233, 249, 280, 318.
- Thuja. J. A. Ph. A. 1912, p. 258.
- Tonka. Circulars, pp. 234, 249, 318.
- Trifolium.
- Trillium.
- 552 Turpeth Mineral.
- 174 Urtica.
- 427 White Pine Bark. J. A. Ph. A. 1912, p. 258.
- Venice Turpentine. Circulars, pp. 234, 279, 318.
- 376 Verbascum.
- 176 Verben.
- 323 444 White Agaric.
- 477
- 496 White Ash Bark.
- 499 Wine, Angelica.
- Wine, Port. Circulars, p. 295.
- 171 Xanthoxylum Berries.
- 193 Yeast.
- 323 441 Zedoary.
- 444 447
- Zinc Peroxide. J. A. Ph. A. 1912, p. 258.

POINTS OF CONTACT BETWEEN THE UNITED STATES PHARMACOPŒIA AND THE NATIONAL FORMULARY.

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The enactment of the Federal Food and Drugs Act which recognized the United States Pharmacopœia and the National Formulary as the authorities for medicinal standards, established a relationship between these two books which cannot be ignored.

The U. S. P., prior to this time, had been accepted in a half-hearted way as the standard for strength and purity of medicinal substances, and the enforcement of its requirements was rather through moral than legal means.

On the other hand the National Formulary had been created as an aid and convenience to the practicing pharmacist and physician and with little thought of its becoming a legal standard.

At the time of the passage of the National law the position of the two books was well defined; each occupied its place and with no thought of rivalry.

The U. S. P. was acknowledged by all to have the right to select the best drugs, chemicals and preparations which were available and when this selection had been made the N. F. Committee went over the remaining field and endeavored to unify those preparations which were used more or less popularly by both physicians and laymen but which had not been considered of sufficient importance to occupy a place in the Pharmacopœia.

The ground covered by the National Formulary was of acknowledged importance and for years the book has fulfilled this mission.

However, with its recognition under the Food and Drugs Act, as a legal standard, new importance has attached itself to the Formulary and its position has been somewhat changed. It yet retains a secondary place as compared with the Pharmacopœia and rightly so, but the secondary place consists only in the im-

portance of the articles recognized and not in the character of treatment which they are given in the text.

The formulas, standards and requirements laid down in the National Formulary for the Fourth Edition should be as carefully selected and as accurately prepared as those entering the U. S. Pharmacopœia since they will be subject to the same likelihood of a test before the courts.

As both the U. S. P. and the N. F. are authorities under the Food and Drugs Act, great care must be used to avoid conflicting statements in the two books. Formulas for preparations having the same title should not be admitted to both books. Methods of procedure as outlined in General Chapters, such as methods for making Fluidextracts and Extracts, Sterilization procedures, etc., or Introductory Notices, containing methods for taking physical constants, weight and measure standards, etc., etc., should be in accord. Tests of the same character should be made to harmonize, assay processes for drugs and preparations should be similar, etc.

It can be seen from the lists of admissions and deletions of the U. S. Pharmacopœia, which so far have been published, that the proposed admissions to the N. F. IV, presented by the N. F. Revision Committee at the Boston meeting, should be somewhat altered if the two books are to avoid this undesirable duplication. For instance, in the N. F. IV list of formulas we find Magma Magnesiae and Magma Bismuthi, both these having been admitted to the U. S. P. IX.

Among the Drugs and Chemicals of the N. F. IV list we find: Calcium Glycerophosphate, Calcium Lactate, Condurango, Diastase, Hydrastine Hydrochloride, Phenolphthalein and Sodium Glycerophosphate, all of which have been admitted to the new Pharmacopœia.

A study of the published list of deletions from the U. S. P. VIII also indicates that the N. F. has before it the necessity of introducing a number of additional formulas, drugs and chemicals if it is to fulfill its mission, i. e., to establish standards for those medicinal substances which are used but which the U. S. P. does not consider it wise to include.

In this list of deletions, as originally published, were 154 articles. Many of these are largely used and those of merit should be given recognition by the National Formulary, without loss of time, so that an official standard is maintained.

It must also be recognized by the Association that the N. F., being a book of standards under the law, must include tests in the new edition. The present Revision Committee is endeavoring, through the cooperation of the Unofficial Standards Committee of this Association, to provide adequate standards and tests for preparations, where necessary, and also for drugs and chemicals not recognized by the U. S. P., but which are used in the formulas.

If the statements just made are justified and in the best interests of both the U. S. Pharmacopœia and the National Formulary there is a natural conclusion that to bring about this condition the two National Standards should be revised simultaneously and should be published and made official at the same time.

This would make possible a number of desirable conditions:

First. A fifth edition of the National Formulary would not be required immediately, a necessity which would cause much dissatisfaction among purchasers

of the fourth edition, because of extra cost; among manufacturers of preparations because of stock and labels; among pharmacists, physicians, students, teachers and members of pharmacy boards because of new standards to learn, etc., etc.

Second. Legal complications would be avoided by having all standards and tests in harmony and no duplicate formulas. Also if it becomes necessary to pass new legislation to establish the new Revisions as the legal standards, the procedure will be simplified if both books can be acted upon at the same time.

Third. Ample time will be afforded for a satisfactory completion of the standards and tests being prepared by the Unofficial Standards Committee, a feature of the new edition which will have much to do with its acceptance in future legislation.

I therefore hope that this session of the committees on U. S. P. and N. F. of the A. Ph. A. will approve of the harmonizing of requirements and tests, entering the N. F. IV, with those of the U. S. P. IX; the elimination of duplicate formulas and standards and the publication of the National Formulary IV simultaneously with that of the U. S. P. IX, and also that the Association will ratify this plan at this meeting.

HOLD ON TO WHAT YOU HAVE.

Any master carpenter can build a house with the help of his assistants and turn it over to the owner; can the owner keep it in repair? Any master plumber can install a plumbing system in this house; can the owner find the cause and mend the leaks? Any licensed druggist can open a drug store and if he has good credit obtain stock and supplies from wholesale houses and manufacturers; but can he run his business at a profit to himself and to his customers? He cannot unless he knows his house or business intimately and knows where the defects are. Every man who has a home of his own knows the smooth running of that home and its domestic happiness depends upon the infinite care taken with little details and the attention paid to little things, trifles to outsiders, but all important to the comfort, peace and happiness of the home. So it is with the drug store; it is the little things that count, not the occasional big things. One can receive and recover from a quick knife thrust, but who of us can stand the constant pricking of a pin; it may not be deadly to the body but it is to the mind and temper.

So it is with the little things of business; it is the neglect of little things that has wrecked many a seemingly profitable venture, and of all business men the druggist should pay attention to little things. There is so much opportunity for waste in the drug store, so many ways by which a little carelessness or neglect can cause loss of real money that the first article of the creed of every druggist should be, "Take care of the little things lest the little things neglected bring care to you."—*American Druggist*.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

WHEN IS EDUCATION NOT EDUCATION?

CHARLES H. LA WALL, PH. M., PHILA., PA.

The answer to the foregoing question might be placed in the same class as the answers to the famous queries, "Why does a hen cross the road?" and "When is a door not a door?" but looking at it from a practical standpoint let it suffice for the present to assume that an education is not an education when it does not lead to some definite end or when it fails to give the individual a return commensurate with the time and labor expended in its acquisition.

There is a tremendous spirit of unrest abroad at present affecting various educational lines, not only professional but also that which is commonly called preliminary education. Writers in a number of popular magazines have recently voiced their disapproval of existing conditions in the public schools where the blame seems to be laid upon the system and not upon the teachers, by critics alike from the laity and from the ranks of the educators themselves. A complete rearrangement of our public school system has been prophesied for the near future and judging from the average results of the present system it is high time that some kind of a change is made. A system which, as the present one does, deals with wholesale promotions of students unfit to cope with the studies in the classes to which they are advanced and which pays no attention to the individual capabilities or requirements, is radically wrong and much of the lost motion and wasted energy could and should be utilized to advantage in a more profitable manner.

These troubles in the preliminary (grammar and high) schools and the lack of uniformity in these schools, not only in different parts of the country, but often in the same state, are the cause of many of our troubles in teaching pharmacy. Some public schools at the present time have their work arranged so that all study periods are provided for in the school roster and no home work is expected or even allowed.

Is it any wonder that we find boys of from seventeen to twenty years of age with high-school certificates in their possession who fail utterly when they are confronted with the necessity of adapting themselves to the new and strange condition of acquiring a large part of their knowledge from didactic instruction, which in order to be effective must be supplemented by reading?

Many of these boys make a fine showing at first; they are good memorizers but poor thinkers, but it is not enough to know a definition by heart, it is also

necessary to understand the *meaning of the definition*. This requires concentration, study and thought. He who is educated is he who can paraphrase a definition or change its verbiage while retaining its essential meaning, but how many are taught to alone see the necessity or advisability of doing that very thing. It sometimes takes a lot of looking up of unfamiliar words to fathom the meaning of a definition. One of the examples that I have in mind illustrative of this is a definition in one of the encyclopedic dictionaries of a family of crustaceans, which definition is as follows:

"A genus of siphonostemous copepods with bodies cyclopiform and more or less clipeate and with styliform mandibles in a suctorial rostrum."

Any person not familiar with the nomenclature of the particular branch of natural history involved would have to look up the meaning of most of the words comprising the definition and then in many instances would have to follow out other references which would be needed to give an adequate interpretation to the sentence. Yet there are boys, and some men too, who think that when they can glibly give the book definition or statement of a physical fact in technical language they have done all that is necessary in the mastery of the subject.

Several years ago, in order to test this very point, I gave to a freshman class a list of technical words, used in the text-books which they were studying and asked them to give definitions in their own words. These boys had a minimum of one year in a high school and many of them had full high-school certificates. Some of the definitions are given herewith as examples of how bad the raw material may be even when it is fully certified by supposedly competent authorities:

Supernatant:

- "The state of being abnormal."
- "The fineness of the mixture."
- "A certain point of heating not done by nature."
- "A liquid which has no particular value."
- "A reserve heat."
- "Not permanent."
- "The process whereby substances mix with one another."
- "More than can be held."
- "Strongly heated."
- "Substances that have absorbed too much water."

Solvent:

- "Anything that is soluble."
- "To preserve or keep a thing."
- "Any article that can be decomposed by means of a liquid."
- "A substance that forms a change in a liquid to produce another product."

Buoyant:

- "A liquid moving upward and downward."
- "The amount which is left over."
- "Having a tendency to shift."

Viscid:

- "Sour."
- "A liquid that is able to be seen through."
- "A turbid liquid."
- "Cloudy."
- "A colorless liquid."
- "Not altogether clear."
- "Not very agreeable, as a viscid odor and taste."
- "Brilliantly clear, as alcohol."
- "A liquid that flows easy."

Disintegrate:

- "To place between the molecules of a substance."
- "Mixing two or more powders."
- "To mix with."
- "To clear or make transparent."
- "To faire (sic) a vessel."
- "The separation of one substance from another substance."
- "To take one substance away from another."
- "Reducing to a paste."
- "To dig out."
- "The process of separating large and fine particles."
- "To separate particles."

Subside:

- "The under side."
- "A change in a liquid during boiling."
- "Ceasing to grow less."
- "The coating of a substance in a container."
- "To give way or surrender."
- "To allow."

Instances might be multiplied like those quoted but enough have been given to illustrate the deplorable condition of our present preliminary educational schools. The words quoted above, with one or two exceptions, are such as are used daily in current literature.

To further illustrate that it is the system and the habit of mind that are at fault and that the labor of teaching is rendered doubly difficult when dealing with raw material of that type, the following definitions are culled from papers submitted by the same class one month later, after having been lectured to and quizzed upon the subject.

The question in this instance was the Purity Rubric or rather the definition of it. The vagueness of the impression made, as I say, after repeated efforts to explain the subject, is well illustrated by the following few, which of course represent less than 10 percent of the class but which are enough to make a conscientious teacher sick at heart.

"Purity Rubric is the doses in the U. S. P. of different ingredients and it explains the color of different preparations."

"Purity Rubric is the language in general used by the people of a country."

"Purity Rubric is the sterilization of the drug."

"Purity Rubric is a drug obtained from the mineral kingdom. It is a very poisonous drug."

"Purity Rubric is pure red."

One student calls it a purified rubric.

"Purity Rubric is that plant that has been purified so it could be used as a medicine, all waste being taken out and absorbed, cleaned and ready for use for the pharmacist. It sometimes occurs as a powder or as whole, red color, but somewhat slight odor. It is used as a medicine in some cases prescribed by the doctor."

"Purity Rubric is the percentage of the purity of a substance in the U. S. P., and this substance when manufactured must always contain this amount or a fine of \$57 will be imposed."

"Purity Rubric tells what the color of the pure drug should be and whether it is poisonous."

"Purity Rubric is the purity of strength."

"Purity Rubric is the amount of material left after the material was examined and all the impurities taken out. The remainder is called the purity rubucant."

Another point illustrative of the same unfit condition of many of the students to hold certificates from the preliminary schools is the frequency with which words that occur in the question are misspelled in the answer. The teaching of spelling seems to be a lost art in the schools at present.

When it comes to arithmetic conditions are even worse than those just

exemplified. Students who come from high schools are frequently proficient in algebra and geometry but the rule of three or simple proportion and percentage are wrapped in obscurity so far as their knowledge, or practical application of them is concerned. Problems in specific gravity might as well be given in Sanskrit, for the answer is often given in terms which indicate that the constant has either been determined in interstellar space or at a point about the earth's center. It is so difficult to teach pupils that the specific gravities of all official liquids and solids range between about 0.6 and 14.0.

I am firmly of the opinion that owing to some vital defect in our present system of preliminary education a large number (not a majority, of course), of holders of certificates entitling them to study pharmacy, by reason of their preliminary qualifications, are far inferior to many of the applicants who have struggled to educate themselves but who are debarred on account of their inability to pass the examinations which are provided for such applicants.

Our present day systems, both in preliminary and in professional work, place too much reliance upon certificates of competency and upon examinations. The woods are full of examiners who could not pass their own examinations (or others of equal severity) if put to the test, and it is time that some common sense provision is made making allowance for the man who is qualified in the essentials, i. e., the three R's and common sense, but is debarred because he cannot correctly parse a sentence from Milton's "Paradise Lost," according to the system of some particular grammarian, or give the chronological succession of the rulers of England, or give a synopsis of some classic (?) which nobody reads except for the purpose of boning up for some examination. The world is full of holders of certificates, diplomas and degrees of all kinds who are not educated anywhere near to the requirements of those certificates, diplomas and degrees and it is time to realize that true education can lie outside of all these external and frequently misleading credentials.

LEGISLATION RELATING TO PRELIMINARY EDUCATION FOR PHARMACY LICENSURE.

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Some laws have been enacted making certain preliminary educational qualifications compulsory for those who enter pharmacy schools or engage in the business of pharmacy. The tendency in several States at the present time is to amend pharmacy laws or school codes and provide such preliminary requirement for pharmacy licensure.

No one having experience in examining persons who apply to the boards of pharmacy for registration will deny that the deficiency exhibited in the work of many applicants is due largely to lack of proper preliminary training. The truth is oft unpleasant, but that jurist who declared recently that druggists are

"men of no great learning," would find his statement justified by the work of the average pharmacy board applicant.

It is not intended to condemn the efforts which have or may be made to correct this condition through legislation. The enactment of laws of this kind is highly commendable and essential, if pharmacy is ever to occupy a proper place among the professions. The sooner all the States have such laws will the stigma of "unlearned" be removed.

Neither shall a review of existing laws on the subject be attempted. However, a rather short experience with the workings of one of these laws leads to some suggestions, which may be of more or less value to those upon whom the duty falls of framing proposed bills establishing a preliminary educational requirement for pharmacy.

The more important provisions should include a progressive requirement, fixing the responsibility for entry into apprenticeship, and safeguarding the rights of persons who have already engaged themselves in learning the drug business. Power should be given those enforcing the law to fix the standard for preliminary education and advance the same, as the status of pharmacy and public educational facilities may warrant.

All who are employed in learning the drug business and as yet unlicensed, should be exempted in the statute from the application of preliminary requirements adopted subsequent to their employment, thereby being allowed to qualify irrespective of these measures.

Some legislation now in effect fixes a completed first year high school course or equivalent education as the standard. While this is now deemed to be adequate by many it would inure to the progress of pharmacy, if a specific minimum requirement were avoided and power to establish one and advance it, without further enactment, duly granted the proper authorities.

The entry into pharmacy of unqualified persons should also be controlled. All who take up the study of pharmacy either in schools or stores should be required to first register with the board of pharmacy. A certificate representing this registration should be granted upon producing satisfactory evidence of having the preliminary education required for ultimate licensure to practice pharmacy, and entitle the holder thereof to be admitted to a school of pharmacy or employed as an apprentice in a drug store.

These laws should provide a penalty in the form of a fine to be imposed upon the person who admits to a school of pharmacy or employs in a drug store, with the intention of teaching them the drug business, any person who does not hold a board certificate entitling them to such privileges.

Thus the responsibility for the entry into pharmacy of properly qualified persons will be placed where it rightfully belongs. Those who now neglect or are indifferent about the matter, will be compelled to inform prospective drug clerks of the requirements which must be met to obtain certificates as legally qualified pharmacists, thereby protecting the interests of both parties and that of pharmacy as well.

EFFECT OF THE FEDERAL FOOD AND DRUGS ACT ON THE WHOLESALE DRUG BUSINESS.

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This paper is intended to convey some idea of the effect of the drugs act in general. I might cite cases where the new law had no effect except to compel the jobber to change his labels and conform to certain rulings, causing no changes to speak of in his methods of buying and selecting goods. I might also bring to your attention cases where the law caused an entire change of policy, just as in the case of retailers when narcotic laws are passed in the several states. The effect on some druggists is very great, compelling them to give up the traffic in the drugs affected by the legislation, but causing no inconvenience whatever to the great majority who refrain from the narcotic business from principle.

I think I am on fairly safe ground when I state that the greater portion of the wholesale druggists of the United States were conducting their business on honest lines and doing their best to supply pure drugs to the trade before the law of June 30, 1906, was made. But it must be admitted that much adulteration was practiced and that many impure drugs were marketed both through the well intentioned jobbers and those who make it a business to offer cheap goods without regard or care as to the quality.

The Food and Drugs Act has caused both the honest and the dishonest dealer to be more careful, especially the latter, with the result that the public is assured better and purer articles in oils and other crude drugs than they were before.

I will not attempt to detail the many changes that have taken place in the drug market, but will bring to your attention a few price advances to show that the drugs act has had its effect not only on the wholesaler, but the retailer, and the public as well, these advances being a pretty sure sign that the quality of the items mentioned has been improved. In 1905 asafoetida was quoted at 22 cents a pound. It is now about \$1.25, or over five hundred percent higher, the deduction being that formerly it was 75 or 80 percent not asafoetida. The actual cost of producing it has not largely advanced, and the demand is no greater than in 1905.

Gum tragacanth has advanced from about 80 cents to \$1.10, which is not so great a difference. I believe it is not so easy to adulterate tragacanth in the flake, which may account for its near purity of old.

Spanish saffron has jumped from around \$9.00 to \$13.00 or \$14.00 and it is most strange that the American flower has dropped from \$1.50 per pound to about half that amount. It looks as though there was no demand now for the home article as an adulterant and therefore not much sale for it.

Russian cantharides has advanced about 50%, manna 60 or 75%, and several other drugs in proportion.

The oil market is the most affected, the improvement in quality being very great. Oil of bitter almonds is 50% better, according to the price lists; oil

of anise 25%; cassia 50%; cubeb about 300%; erigeron 200%; fennel 25%; lavender flowers 80%; orange, both sweet and bitter, 25%; pennyroyal 90%; pimento 25%; rose geranium 100% and savin 100%.

On the other hand, oil of tansy has declined, but it is the only example I could find of a decided decline in price. Cod liver oil has declined greatly since 1905, but this is one of the drugs which, I believe, has never been much adulterated, the decline being due to lessened demand and greater production.

The law has affected sweet oil in the ruling that none but olive oil can be so labeled. This caused the wholesalers a lot of trouble when the druggist ordered "cheap sweet oil for external use" and got "cotton seed oil." He often raised a howl, with seeming cause.

The one feature of the law which affected the wholesaler more than any one else was its stipulations as to labeling. The label makers of the country got a good many thousands of dollars' extra business, making labels to conform to the rulings, and they made no fuss about it.

The wholesalers accepted the provisions of the law and, so far as I am informed, they believe it has made conditions better for the business, or at any rate has placed the manufacturing and wholesale drug business on a higher plane and has without question been a great benefit to the public at large. Our respected Congress probably had the public in mind when it passed the law, and the wholesale druggists, like most business men, are willing to accept and conform to any regulation that will tend to the betterment of the nation.

The law has had one very good effect on the wholesale business: it has made it much easier to buy pure drugs. Formerly many samples had to be rejected, and even large shipments had to be returned because they did not conform to the U. S. P. standard or to the standard made by the purchaser. Now the importers and manufacturers are more particular, and it is seldom that goods are received which do not meet the requirements.

The responsibility of the wholesaler is great, however, for he must know that his drugs are pure and is compelled to use every care and precaution in securing his supplies.

A MISGUIDED SWINDLER.

An enterprising swindler in England has recently been arrested for selling dried peas as "Little Liver Pills." They were sold on the assurance that they were "excellent medicine." Of course, dried peas are not an "excellent medicine" neither will they cure "liver trouble," but the same may be said of the many "liver pills" which contain drugs and are sold under claims even more fraudulent. The British swindler should have been better informed. When he desires to sell "liver pills" he should put some drugs in them—poisonous or otherwise, the kind doesn't matter. Then he can lie about his product to his heart's content and he will be immune from arrest. In fact, if he can sell enough of them he may look forward to a peerage. In Great Britain, as in the United States, it is not the mere act of swindling, but the method, that proves dangerous.—*Journ. A. M. A.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

OIL OF EUCALYPTUS GLOBULUS AND THE SOLUBILITY TEST.

EDWARD G. BINZ, LOS ANGELES, CALIF.

Eucalyptus globulus is the only variety of the eucalyptus growing in the State of California in quantities sufficient to distill oil from. This being a fact, all eucalyptus oil distilled in the State of California must be a true oil of Eucalyptus glob.

I have made a particular effort to get oils of eucalyptus that have been distilled from various parts of the state, and have carefully applied the 70% alcohol solubility test, but have found none that will form a clear solution with three volumes of 70% alcohol U. S. P.

The oil will not form clear solution with three volumes, either in its crude state or after it has been refined.

I have tried fractional distillation, to determine which fractions are and which are not soluble in 70% alcohol. The distilling was carried on in 10% fractions, taking a small portion from each 10% fraction. I find that the first six fractions will not form a clear solution, and that the 7th, 8th, 9th and 10th fractions will form clear solutions.

Thus it can be seen that one can make an oil of the eucalyptus glob. that will stand the solubility test, providing he is willing to waste 60% of his product, which surely would not be a profitable undertaking.

The oil of California Eucalyptus Globulus, when carefully distilled, will stand every test of the Pharmacopocia with the one exception of the solubility test.

Eucalyptol content appears to me to be the most important matter in any eucalyptus oil. The globulus oil will at all times show a eucalyptol content as high as 60% and 70%, which is above the U. S. P. requirements.

I hardly think that the solubility test has any advantage in enabling one in determining the eucalyptol content, as the fractions that do not stand the solubility test contain the larger portions of the eucalyptol in those that I have taken, yet the oils we have in this market coming from Australia will stand the 70% alcohol test when they contain just enough eucalyptol to pass the U. S. P. requirements.

Oils of eucalyptus respond differently to the 70% alcohol test as to the variety from which they are obtained, some being soluble in one and one half volumes, others in 2 volumes and 3 volumes. It hardly seems fair to California if this 70% test must be adhered to.

I submit herewith samples of oil of eucalyptus. Sample No. 1 is an Australian

oil of eucalyptus, and the one generally sold by the jobber. This oil has a faint citronella-like odor, and is a mixed oil of eucalyptus.

Sample No. 2 is an oil taken from an original package and is labeled eucalyptus globulus. This has an odor resembling that of campho-phenique, an odor that is not found in the globulus oil.

Sample No. 3 is a first distilled oil of the Eucalyptus glob, and one in which the aldehydes predominate. These aldehydes are present always in the globulus oils, by which they are very easily distinguished.

Sample No. 4 is a triple-distilled oil and highly refined, has the aldehydes extracted therefrom, and is a true oil of the California Eucalyptus globulus.

I have yet to find any authority either in a commercial way or from the Australian government but that readily admits that the amount of true Eucalyptus globulus distilled in Australia is so very small that there is great doubt whether any of it ever finds its way to this market.

If we are to conform to the 70% solubility test, then California will have to leave the market to the foreign oil.

It is admitted that the foreign oils will conform to the U. S. P. requirements, but nature does not in the Eucalyptus globulus, produce an oil that will form a clear solution with the 3 volumes of 70% alcohol.

AMERICAN VERSUS EUROPEAN TRAINING IN MEDICINE.

The American doctors still throng the schools of Europe. Many of them imbibe little beyond floods of German beer and a snobbish contempt for their own country. Many go over simply for the *eclat* that is supposed to attach to the man who has studied abroad. Some others find in the methods and men of the Old World much that is really valuable, and some, we hope, also learn to look with pleasure on the achievements of their own countrymen. But, taken all in all, we have more than a suspicion, in truth a deep impression, that nine out of ten of these medical votaries of Europe would learn very much more of the things that would make them better doctors right here in America.

Let us summarize the matter by saying that the doctor should go to Europe when he has learned all that America has to teach him. There is not in all the wide areas between Queenstown and the Urals a therapist whose teachings are so much superior to ours as to justify the expense of a steerage ticket. There are some specialists who are allowed preeminence because they are "foreign." There is not a department of medicine in which American instructors may not be found equal or even superior, in the training of English-speaking men, to the best abroad. Nine-tenths of the money spent on European "study" by medical men is wasted—or should be charged to advertising account.—*Clinical Medicine*.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

SOME EVERY-DAY PROBLEMS.

FRANK E. MORTENSON, PH. G., PUEBLO, COLO.

Commercial and practical pharmacy covers such a large scope as to give the writer a great variety of subjects to discuss. In my remarks I will endeavor to dwell largely on matters which seem to me most important to the retail druggist.

A constant evolution takes place in pharmacy as well as in other lines of business and professions. There seems, however, to be a greater feeling of unrest and dissatisfaction among men engaged in the drug business than in other walks of life, and why is it? And why do men engaged in pharmacy not go into other lines of business? Perhaps there are many reasons for the existence of such conditions, and many reasons why men continue in the same line of business. In the first place, many pharmacists began their vocation while mere boys, and not all have the same motive for commencing such a career. I believe a great many have begun their drug store life because of a chance to make a little spending money by working evenings, Saturdays and during vacations, while others have been deluded into the belief that it is an easy, dignified way of making a fortune without much work. The latter class of course are the most disappointed. The young man does not realize this until his mind has become so thoroughly saturated with theoretical pharmacy and his time so completely taken up that he cannot think about any other way of making a living, and eventually concludes that he is unfit for anything else and perhaps spends his entire life in a pharmacy.

Pharmacy *should* be an attractive, dignified profession, but as conditions are today it is a great disappointment to most of our retail brothers and we, ourselves, are largely to blame; not directly, but we are to blame for not standing up for our rights and defending ourselves against unjust attacks by different interests and unscrupulous methods used by other business houses as advertising schemes.

In the first place, we should be active in association work, local, state and national, and demand recognition in political affairs. But we are too afraid of expressing our opinions for fear some one won't believe just as we do, and that we shall thereby lose a customer. Again, we think it is a sin to give an hour to an association meeting. Consequently we have submitted to dictation by outsiders until a great many people have been led to believe that druggists are all bad. No doubt some are,—so are some preachers, some doctors, some

deacons, and even some "school ma'ams"—but we should not be asked to bear the same reputation that applies to the occasional black sheep in our midst.

With an army of druggists, such as we have in the United States, we could secure almost anything reasonable in the way of legislation and protection if we were willing to fight for it. I believe it is unjust and unfair for drygoods stores to sell for advertising purposes at cost or below, articles that belong to the druggist, at the same time making people think that the druggist is a hold-up. The regular price of most such articles gives the druggist only a fair profit. Not long ago a grocery man said to me, "he did not see why he could not sell patent medicines as well as a druggist." I told him that I did not agree with him, that a druggist certainly knew something about even a proprietary remedy, but I thought that a druggist could sell tea and coffee just as scientifically as a man behind the grocery counter, and it might be quite a drawing card to sell these staple articles at cost. He had nothing more to say on the subject. About all they want to leave to the druggist is the violent poisons and the high priced and rare drugs.

Another great drawback with us today is the misunderstanding and cold relationship existing between physicians and pharmacists. Physicians naturally object to the manufacture and sale of proprietary remedies, and of course, are also opposed to counter prescribing. But what are we going to do about it? In our present condition, the prescription business is worth mighty little to the average druggist, and is perhaps a losing department, considering the amount invested, the valuable space taken up, and the keen attention required to conduct this department. Many physicians prescribe high priced specialties and proprietaries for which the druggist has to pay exorbitant prices and many times he has to buy a pound to use an ounce and very often the balance is left on his hands as a souvenir. This, I believe, leads to counter prescribing.

Then we have the dispensing doctor to contend with. I don't believe physicians are any more capable of compounding and dispensing than druggists are of diagnosing and prescribing. The busy physician cannot give the study and attention necessary in the manufacture of medicines nor can he be a "good mixer" in this sense of the word. Compounding a prescription might be compared with baking a cake—proper manipulation is as essential as the right ingredients and proportions. What would a castor oil emulsion look like if the proper amounts were put in the bottle with a "shake label"? Where would be the beautiful color and corresponding composition that belongs to Basham's Mixture if the ingredients were not added in their right order?

The care in the handling of drugs is also very important. Many preparations have to be kept in amber-colored bottles, others in glass-stoppered containers, and still others in completely filled bottles—while temperature must also be considered. All these things the pharmacist should be thoroughly familiar with, while the doctor has something else to think about. I am in no way blaming the doctors for these conditions—we have not convinced them that the pharmacy is the proper place for all medicines to be prepared. Neither have we made any defense to the attacks made on us by yellow journals.

In conclusion, I wish to make an appeal to all druggists to aid in a fight for a law confining the sale of all remedial agents and poisons to registered pharma-

cists; and let us also make a greater effort to convince the physician that medicines should be prepared and dispensed in a pharmacy, and that it is far better for him to prescribe U. S. P. and N. F. preparations than nostrums of unknown composition sold at exorbitant prices.

We are continually clamoring for increased educational requirements and higher standards among ourselves. I am thoroughly in accord with this idea. It has been my wish for many years to be able some day to run an ethical pharmacy, but at the same time I have no notion of making a failure in business while trying to accomplish my desire. The druggist who has been financially successful, is the one who is keen in merchandising, regardless of his pharmaceutical knowledge.

DISCUSSION.

Mr. Charles Holzhauer, of New Jersey, began by saying that he had come to the Section session this afternoon in the hope of learning something, but found that each one had a different idea about things. One thing that he was sure of was, that the drug trade of the country must pay more attention to the commercial end of the business, or "we won't be druggists very much longer." He thought one great trouble was that the average druggist was trying to follow somebody else, instead of working out his own salvation. In his opinion, it would be worse than folly for the majority of druggists to throw aside the commercial end of their business and endeavor to run a strictly ethical pharmacy. He did not wish to be understood as being opposed to ethical pharmacy, for he believed in it most thoroughly; but he had tried the experiment himself, and had learned that there was not enough in a strictly ethical pharmacy to provide a living.

Continuing, Mr. Holzhauer said he thought the average druggist—not excepting himself—was too narrow in his views. Everything he did was on a small scale, and the majority of his sales were for five or ten cents, and even when he put up a prescription everything he handled was small. Then if he became disconsolate and went into his back room to brood over the condition of his business, he would not be in condition to wait on the next customer.

Recurring to the remarks of Mr. Kendall, of Mississippi, in the discussion of the two papers on advertising presented earlier in the session, Mr. Holzhauer said that he had listened with interest when the gentleman had said that he advertised he was the only genuine druggist in his town. This is all right where a man could take that position, but not every man could do it. Many a druggist was so situated that he could not make such a statement and be truthful and honest. Another man would say that he would not have a soda-water fountain. Neither would he, if he made nothing out of it. He believed it was a mistake to have a soda-fountain and not do a soda business. As for himself, he would not be willing to dispense with his soda-fountain. Personally, he would prefer to do so, but it was a profitable branch of his business, and he could not afford to do without it. It was the same way with the man who said he would not sell garden-seeds. Neither did he, but if he could see a profit in it he would sell them. It was the same with paints; while he did not sell them, if he thought the business would be profitable, he would sell all the paint he could. His judgment was that no druggist should follow absolutely any other man's course of business, but should take that which he could make use of, and nothing more.

As touching the subject of cooperation, Mr. Holzhauer said that while he believed in it, it could be made a curse to the retail druggist if not properly used. For example, he thought it foolish for a man to say, "I won't do this or that until we can get all the druggists of the town to cooperate." Druggists should have the backbone to stand up for what they believed was right and proper, and when they learned to do that they would find conditions better for themselves, and their business would be immensely more profitable. His advice was for the druggist not to wait to see what his neighbor was going to do, but if he felt that he was keeping his store open three or four hours longer at night than he should do, the thing to do was to stand by his conviction and close it, and everything would come out all right. It was the same way about Sunday-closing. If he wanted to close his store on Sun-

day, let him do it. The thing for the druggist to do was to broaden out, and get away from his narrow views. As to the prescription business, Mr. Holzhauer thought that many times where the pharmacist got his own price for a prescription, all it would stand, that, considering the time required for its preparation and delivery to the customer, it was not as profitable as if the same time and attention had been bestowed upon the commercial end of his business.

Continuing, Mr. Holzhauer said that he stood for the proposition that the druggist should be the leading man in his town, instead of the "under dog" he frequently was, because he was not willing to put up a fight and take the position to which he was entitled. The average druggist was a respected man in his community, and he was entitled to take position with the best citizens. He could not do this, however, if he never left his little store, and raised his family in this atmosphere. He must get out of these narrow bounds if he expected to be a man of force in his town. In many years of personal observation, he had never known of a single druggist who had gotten rich in the drug business. Some of them were rich, it was true, but it was because they had taken advantage of their situation and had broadened out in their activities. Their retail business was simply a starting point, and they had gone on from there. He thought that this was what every druggist should strive for. The average retail druggist never thought of making an investment outside of his business—and this was all right, if all the money he had could be profitably used in his business. By all means, he said, if by carrying an increased stock he could do an increased business, that was the thing to do. He often wondered how many retail druggists owned a little stock in the bank in which they did business. This was a good asset, and it was a desirable position to be in, to be able to borrow money because of the reputation he had as a man of business affairs. The druggist often had opportunities of investment which did not come to everybody. He knew what was going on in the town, and he was in position to invest in certain legitimate enterprises, and benefit from them as other commercial men did. He thought all these things had been too much neglected in the past. This Association, he said in conclusion, had done nobly along the lines of scientific work, and he would not for a moment belittle its accomplishments; but if the commercial end of pharmacy could not be brought up to the standard of the times, the time would surely come when there would be but little use for the scientific end of pharmacy. The druggist must get in the way of doing things out of which money could be made, and be correspondingly respected in the community in which he lived.

Mr. G. C. Kendall, of Mississippi, said he thought the difference of opinion developed here as to having a soda-fountain in the drugstore was a matter of local conditions: but there could be no difference of opinion as to what department of the drug business it was where a man made his reputation, for this was behind the prescription counter. As touching the subject of cooperation, and the acknowledged desirability of being on friendly terms with physicians, he thought the man who had a reputation as a dispenser of soda-water could not expect to have the same standing with the physicians in his community as the man who had earned the reputation of being a real druggist.

Mr. Holzhauer responded that if a man was going into the soda-water business, he ought to make up his mind to be the best in the town at it—not that he should draw it himself, but that he should build up a large and profitable business in that line, and expressed the opinion that the place for the druggist was to supervise every department of his business—to see that the soda-fountain was run properly, to see that the prescription department was run correctly. Whatever avenue promised the greatest success, there he should be found.

Mr. Kendall's reply to this was, that the place of the pharmacist was not behind the soda-fountain, or even behind the prescription-case, but he should have competent help in both departments, and be at the front himself, where he could greet his customers and make friends in his business, and where he would be worth more than any employe he might have.

Mr. Kendall said that if they had more energy down South, "and one-fourth of the lack of regard for the truth that these Westerners have," they would have the greatest country on earth. Everywhere about Denver, he said, people were confronted with the sign, "Keep smiling!" He thought this would be a good idea to apply to the drug business, as an

antidote to the grouchy condition that overtook the druggist when he fell down on a sale of patent medicines.

Mr. Kendall said that in his town they had fourteen drugstores, and there were two or three leading druggists there who advertised in this way: "Come in and wait for the car." "Come in and enjoy our fans." "Come in and drink from our fountain." He saw a mighty poor chance to sell a fountain syringe, or some article of toilet water or toilet goods, to the lady customer who came in with the idea of making such a purchase, with a dozen ladies from her neighborhood sitting around the proprietor's tables, "enjoying their refreshing drinks and the cool breezes from his fans," watching to see what she was going to buy. "No," said he, "she will go around to Kendall's store, where there is no one sitting at the tables and watching for material for tea-party gossip." He said he believed he sold twice as many fountain syringes as all the rest of the drugstores in his town put together, and largely for this reason. "I advocate the policy of soda-fountains," said Mr. Kendall, "for my competitors. It pays me for them to have them." As to the doctors, Mr. Kendall thought that the failure of cooperation was generally the fault of the druggist. He made them pay for every hypodermic tablet they got in his house. It was a matter of business to do so. With regard to counter-prescribing, he said if a man came in and said he was a little bilious and wanted a purgative, he gave him three capsules, and charged him a dime for them. If he came in for the stomach-ache, he gave him something for that. He did not class this as counter-prescribing. But if he came in and said, "I am feeling a little bad," he looked wise and said, "My friend, you don't know just exactly what this is going to result in. My advice to you is to see a physician." Nine times out of ten he will ask where he can find a good physician, and he would reply, "Just go upstairs, and any man you find in his office is all right." The result was that, instead of getting a dime out of that fellow, the doctor would get a dollar or two, and he himself would always get two prescriptions, one for a dose of calomel, 25 cents, and a tonic at 50 cents. It was good business to make 75 cents, instead of a dime, and at the same time make a friend of the doctor.

Mr. Holzhaner humorously responded to this that he had a friend once who did that same thing, and the man came back to him and said: "I want ten cents' worth of absorbent cotton." The druggist asked him if he had been to see the doctor, and he replied in the affirmative. He then asked him if the doctor had given him a prescription, and his reply was, "No, he gave me some tablets and some iodoform."

Mr. C. J. Clayton said he had been wondering how Mr. Kendall managed to "smooth it over" with the doctors when he allowed his name to appear under the advertisement of patent-medicines. In Colorado, he said, the doctors would all be down on him.

Mr. W. B. Philip remarked that the "almighty dollar" was a mighty serious proposition, and everything that could be done here to help the druggist get more of the dollars was going to help this organization. He told of a little scheme that he had hit upon, like this: He had figured out his percentage cost of doing business, approximately, and every case of goods that came into his house he had marked with a cost and selling mark. If he did not make his percentage cost of doing business on an article, where it was cut down very low, he took a blue pencil and marked heavily under the cost price, and every time one of his clerks would sell that article he knew he was losing money. He purposed to carry this a step further and use the blue-pencil scheme to show the clerk where money was being made.

Continuing, he said that the doctor proposition was a very hard one to solve. He had one doctor who, for every prescription he wrote, took a ten-cent cigar, until he was forced to cut that out. Another, whenever he got into trouble and wanted a formula, would come to him to work it out for him, and then take it over to a neighboring druggist, so that he could make it just as well. Still another never wrote a prescription on the druggist's blanks as he seemed to feel that he was lowering himself in the druggist's eyes. This was a hard proposition, the handling of the physicians, but he hammered at it all the time, and was gradually getting more and more of that class of business. Mr. Philip said he thought that one of the best investments that a druggist could make was in the lot and building he occupied. Had he made such an investment at one time, when he started a store on a corner lot, he would have cleared \$15,000 inside of five years. Since then, he had made a

number of real estate transactions, which had yielded a good profit. He told of one instance where, at one time, \$5,000 was offered for a building and store, but the owner wanted \$6,000, and there was no sale. Later, the party occupying the store offered \$11,000 for the property, and the owner asked \$15,000, and still there was no sale. Within the last two years this property was sold for \$42,000. He was decidedly of the opinion that very often the best thing the druggist could do was to purchase the property in which he did business.

Mr. W. H. McCutcheon, of Oklahoma, stated some of his experiences. Shortly after starting in business he married, and he and his wife lived in the store building. She helped him in the drugstore, and he noticed that he had a phenomenal sale on rubber goods. When after a while they felt that they should have a home away from the store, he noticed that it was but a short time until he was not selling any rubber goods. At first he did not realize what the trouble was, but finally engaged the services of a young lady in the store, and the extra profit that she earned on such goods more than doubly paid her wages.

One of the features of his store was a rest-room behind the prescription case, and he advertised this to the country people adjacent to his little town, and they would come there and bring their luncheons and avail themselves of this privilege. He was satisfied that this rest-room had paid for each year's rent since it was established.

EFFICIENCY.

Ask me what's the biggest idea in business today and I'll tell you—Efficiency.

Old-time methods, antiquated business forms, have got to give way before the rapid advance of modern drug methods.

Plans and schemes that made good a year ago fail utterly today. Business is constantly changing—so also have merchandising methods got to change.

Efficiency simply means the application of right methods at right times. There is efficiency of advertising, salesmanship and business organization. The efficient business is the successful business. Efficiency is not red tape—nor is it a forty-second cousin to red tape.

Efficiency means procuring the maximum production with the minimum labor. Efficiency is the lubricant that oils the wheels of commerce—making the machine of big business run smooth and frictionless.

Efficiency means organization—a place for every one and every one in his place. Efficiency in the drug store means the development of selling, advertising and business departments, so that with the least labor and at lowest cost the most productive results are forthcoming.

"Efficiency is the higher percentage of net results."

"Efficiency is the elimination of waste."—*The New Idea*.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

EARLY HISTORY OF PHARMACY IN KANSAS.

L. E. SAYRE, LAWRENCE, KANSAS.

Any one who is familiar with Kansas history knows that its pioneer days were in about the year 1854. The next succeeding years were struggling times for the State.

In order to obtain historical data concerning Pharmacy of this early period, it has been necessary to search the records of the Historical Society at the capital city, Topeka. In these records I find in one of the early Kansas papers an account of a physician, pharmacist, and postmaster*—Dr. Geo. A. Cutler, who was one of the noted characters. After the adjournment of the free state convention at Lawrence, Dr. Cutler was taken sick with typhoid fever and lay ill at Governor Robinson's house for some time. When he became able to travel, by aid of assistance, he arrived at Doniphan, where he was pursued by ruffians; they found him and immediately hoisted him into a wagon and started for Atchison; upon arrival there, a courier was dispatched giving information that they had captured one of the leaders of the Abolition party. He was tried for high treason before the Squire and convicted, and given his choice to hang or be taken to LeCompton, where a pro-slavery army was gathering, preparatory to being taken to Lawrence. The sick man chose hanging. After much argument and dissension it was finally decided to take him to LeCompton, where he was placed in a tent. Shortly after this he was released and fell into the hands of a good nurse at Lawrence, who brought him back, as it were, "from the grave." Dr. Cutler in this history is noted as one who took part in the daily events of the period, so full of excitement and danger as that of the early history of Kansas. He helped recruit and organize the "Ragged Regiment," which General Lane, Colonel Dickey and Judge Morris Hunt patrolled through Idaho and entered Kansas about the first of August, 1856, and by forced march arrived in Topeka in time to hear the pro-slavery patriots on the Wakarusa near Lawrence, and started at once for the seat of war, and consequently was in the various fights that followed in quick succession.

In an early paper known as the "Commonwealth," we find a medical paper, one of the earliest contributions, written by Dr. Williamson, and read before the Medical Society. In it he tells how he used to practice medicine "when men's lives were not worth much," and gives incidents encountered during the troublesome times of '61. He tells how a free state man, Dr. Eagles, was noti-

*Physicians, in the early days in Kansas, were mostly Dispensing Doctors (physicians and pharmacists combined.)

fied by border ruffians to leave the territory or suffer consequences, which meant in those days the taking of his life and the pressing or stealing of his property for the simple reason that he was not, it is stated, "all right on the goose." In the summer of 1856, it is stated the Doctor "could beat a partridge hiding in the hazelbush and save his neck." He persisted in staying, and was a very good representative of the early "eclectic." In those days, it is stated that every other man who came (in 1856) had dubbed himself "professor" or "doctor," but the personal danger attending the practice of medicine soon thinned the ranks, so that the overworked doctors who accepted the situation had no light task. The writer gives us a number of cases of hairbreadth escapes during his hazardous attempts to practice medicine. The physician, it is stated, carried his life in his hands, and when he left home in the morning his death at night would not have been a surprise.

In Gray's Doniphan County History there appears as a frontispiece the figure of a savage, in his native costume, as the original owner of Doniphan County Kansas lands; the name of this savage is not mentioned. On page 86 the following statement is made: "The proprietors of Ayer's Ague Cure at one time owned land here. In the early days before the swamps and bogs had dried up, Dr. Ayer sold enough Ague Cure to purchase many good Doniphan county farms. There is not an old settler who will not tell you that the ague was more to be dreaded than the visits of the Indians. In territorial days business centers showed their enterprise in newspaper advertising in such historic papers as the "Kansas Press," "Kansas Freeman," "Kansas Weekly Herald," "The Herald of Freedom," the "Squatter Sovereign," etc. From the columns of these publications, and others, is transcribed the following:

The "Kansas Freeman," Oct. 25th, 1855—"Medicines, wholesale and retail, just received at Commercial Headquarters: 200 doz. boxes Grafenberg vegetable pills, 30 packages health bitters, 75 doz. boxes Green Mountain ointment, 60 doz. boxes fever and ague pills, 36 doz. children's panacea, 49 doz. sarsaparilla, 20 doz. pile ointment, 40 doz. uterine catholicon, 5 doz. consumptive balm, 100 doz. cough candy. Another large bill has been shipped from New York so that the millions may be furnished here."

In the "Kansas Press," May 30, 1859, a full column advertisement is occupied by the following gentlemen, for drugs and medicines: S. F. Johnson, wholesale druggist, Cor. Delaware & Main Streets, Leavenworth, at "St. Louis prices"; the Drug Market, E. E. Allen, wholesale and retail; advertisements of drugs including window glass, old whiskeys, Virginia tobacco, and stationery; Dr. G. J. Park, wholesaler and retailer of drugs, medicines, chemicals, paints, painters' materials, oils, burning fluids, varnishes and physicians' prescriptions, as well as family medicines; drugs by G. A. Eddy & Co, wholesale and retail dealers, Delaware St., between 3rd and 4th, Leavenworth City, K. T.

In the Kansas Weekly Herald, dated Oct. 13, 1854, there appeared three columns of patent medicine advertisements: Dr. Easterly's Vermifuge, $\frac{1}{8}$ column; Dr. Hunter's German Bitters, $\frac{1}{8}$ column; Dr. Cook's Magic Hair Oil, $\frac{1}{8}$ column; Dr. Easterly's Extract of Iodine and Sarsaparilla, 1 column; Dr. Easterly's Fever and Ague Killer, $\frac{1}{4}$ column; Dr. Carter's Cough Balsam, $\frac{3}{4}$ column; Dr. Easterly's Pain Killer and Dr. Easterly's American Oil Liniment, $\frac{1}{2}$ column;

also Dr. Baker's Specific, 18 column, a remedy for venereal diseases, in which the doctor states: "This invaluable remedy has saved thousands upon thousands from the hands of merciless quacks, if not from a premature grave, etc."

The "Herald of Freedom," devoted to humanity and the interests of Kateses, of July 21, 1855, contains an advertisement by L. C. Talls, M. D., in which Dr. Talls states he has purchased the medicines, fixtures, etc., belonging to the late Dr. Clark, and says he is in readiness to answer all calls in line of his profession; dated Lawrence, June 2nd, 1855.

The "Squatter Sovereign," of Atchison, April 15, 1856, contains the following advertisement: "The University's family remedies should be under the sanction as well as the authority of the seal and authority of the University field of medicine and popular knowledge, chartered by the State of Pennsylvania, Apr. 29, 1853, with a capital of \$100,000, mainly for the purpose of arresting the evils of spurious and worthless nostrums, also for supplying the people with reliable remedies, whenever a competent physician cannot or will not be employed; this institution located in Philadelphia, No. 68 Arch Street, where applications for new agencies will be received, has purchased from Dr. John Rowand his celebrated "Rowand's Tonic Mixture," known for upwards of twenty-five years as the only safe and sure cure for fever, ague, etc." The advertisement continues: "Remedies for fever and ague, bowel complaints, complaints of the lungs, dyspepsia, and constipation," and an almanac is issued by this company under the authority of F. S. Robertson & Co., Miami, Saline County, Mo.

On page 56 of the "Early History of Leavenworth City and County Drug Stores;" The first drug store in the city was built and owned by Dr. Samuel Norton, who came from Weston, Mo., and who was one of the original Town Company. It was first a frame building and stood on the south side of Delaware street, just east of the corner of Second and Delaware streets, and was built late in the fall of 1854. It was afterwards removed and the two-story brick building, known as the Norton building, was erected on the same site, and is still standing. Dr. R. E. Allen, late of Liberty, Mo., built and occupied as a drug store, about the same time, a one-story frame building on the west side of Main street, north of Delaware street, opposite the Anthony buildings.

In the "Cutler's History of Kansas, 1883, occurs on page 434, among the descriptions of the manufacturing industries of the city of Leavenworth, a description of the Brown Medicine and Manufacturing Co., pharmaceutical manufacturers and perfumers, No. 113 Delaware street. This house, it is stated, is largely engaged in the manufacture of pharmacopoeial and other pharmaceutical preparations. The company was organized in 1876 and has the following officers, most of whom have been from the beginning: G. A. Eddy, president; W. B. Slosson, vice-president; J. P. Baulserman, secretary; R. J. Brown, superintendent and treasurer. The latter gentleman was very active in the American Pharmaceutical Association. The annual sales of this firm, it is stated amounted to about \$75,000. Mr. William Spencer, graduate of the Philadelphia College of Pharmacy, associated with the establishment in 1884.

At the Capitol building Historical Museum there is exhibited in a show case a hand bill, reading as follows: "Prof. Miss Kate Bender can heal all sorts of

diseases, can cure blindness, fits, deafness and all such diseases, also deaf and dumbness.

Residence, 14 miles east of Independence, on the road from Independence to Osage Mission, one and one-half miles S. E. of Norehead Station.
June 18, 1872.

Katie Bender."

This dodger was circulated by the notorious murderess, Kate Bender, herself. The Benders kept a road house, or feeding-place, on the main road leading from Osage Mission to the United States land office at Independence, Kansas. It is stated that the traveler lured by this advertisement, was sure to meet his death. — In the "History of Kansas," above referred to, there is a description of the Leis Chemical Co., mention of it being thus made: "This gigantic manufacturing establishment has grown to its present proportions mainly through the efforts of George Leis, who, as a druggist, commenced the manufacture of chemical preparations; for several years he continued their manufacture; on February 4, 1880, a stock company of the prominent business men of Lawrence was organized, with a capital of \$50,000; its first officers were J. P. Usher, president; I. N. Van Hoesen, vice-president; George Leis, secretary and manager; H. Benson, treasurer; W. J. Leis, manufacturing and assistant manager. Patent medicines: The manufacture of patent medicines was commenced in a small way by Dr. S. O. Hymoe in 1867; according to the demand the business increased until the sales amounted to \$150,000 annually. His medicines embraced ten different varieties of chemical preparations for the manufacture of which its establishment employs eight experienced hands. Hymoe's remedies through the West, it is stated, are known for their purity and efficacy. Directors: H. C. Smith, W. G. Hills, C. E. Wilmoth, and J. D. Bowersock. In the autumn of 1882 a brick laboratory four stories high, 50x85 feet was completed at the cost of \$18,000, employing 55 skilled operatives—the Leis Manufacturing Co., manufacturers of Leis's standard medicines and pharmaceutical preparations, perfumery, fluid extracts, baking powder, etc.; 300,000 gross different preparations are manufactured annually. It is stated that the establishment is one of the most successful business enterprises in the state.

There is a record in 1860 that Drs. Gillihan and Packard in Iola, Kansas, emptied their medicine cases together and the result was the first drug store in that place. This passed to Gillihan & Cowan, then to J. M. Cowan & Son, then to S. Ridenour & Co., then to John Francis, then to John M. Scott, then to Campbell & Burrell.

The autobiography of Peter D. Ridenour, published in 1908, on page 269 states: "In the year 1866 my brother Samuel came out from Ohio and proposed to select a location in Southern Kansas and go into the grocery and drug business, if Mr. Baker and myself would take a half interest with him. He had been in the drug business in Ohio. The town of Iola in Allen County was selected; a small grocery store building was bought and stocked with drugs and groceries; he did the purchasing of drugs, and I bought the groceries. The firm of Ridenour-Baker Grocery Company is now one of the largest wholesale grocery stores in the middle west, located in Kansas City, Missouri."

In the Atchison Daily Free Press, May 8, 1855, I find two large advertising

cards: drugs and sundries, M. W. Horn & Co., and Buddington & Co., the latter purporting to deal, in a wholesale and retail way, in foreign and domestic drugs.

One of the earliest advertisements of the Topeka drug stores we find in the Kansas Tribune, dated Aug. 15, 1857, in which C. C. & E. P. Kellum, corner of Fifth and Kansas avenue, announce they are opening a general assortment of drugs and medicines, flavoring extracts, fancy articles; also books and stationery.

In the Leavenworth Times of April 25, 1886, there appears a cut of the large establishment of Geo. A. Eddy, wholesale druggist. Mr. Eddy commenced the drug business in Leavenworth in 1857; he employed two traveling salesmen for state work.

In the Leavenworth Directory, published in 1859-60, in the index of advertisements, the following firms appear: E. H. Anderson, G. A. Eddy & Co., Samuel Norton, J. G. Park—each of these being given a portion of a page for advertising space.

In the History of Doniphan County, published in 1868, appears the notice of August Miller, Wathena, Kan.; A. Brantana, Troy, Kan.; and H. M. Sales & Co., Doniphan, Kan.

The Kansas Herald, published at Leavenworth, June 15, 1855, contained an advertisement to the effect that Dr. Day has just received and is now opening a choice and select stock of pure drugs and chemicals, patent medicines, paints, oils.

The first medical publication in the state was published in Leavenworth as "The Leavenworth Medical Herald," by C. M. Logan, M. D., and T. Sinks, M. D., editors. Articles in this Medical Herald show that materia medica takes quite a prominent place as compared with surgery and practice. Theo. Eordorff, 409 Delaware St., Leavenworth, is stated as having one of the best known establishments in that city, and having an extensive drug house. Mr. Eordorff was originally from New York; began business in 1862, occupying a store 25x100 feet, three floors, and basement, and carrying from \$40,000 to \$50,000 stock, his sales amounting to \$150,000 per annum. One of his leading specialties is "Corn-wart-Skin," also Medicated Malt Gin and Wahoo Bitters."

In the Cottonwood Falls, Kan., "Banner," Apr. 17, 1869, appears the advertisement of Dr. G. W. Williams, druggist—low prices, Cor. Broadway & Friend Streets, Cottonwood Falls, Kan., advertising space about one-third column.

Dr. C. E. Sapp, located in Cimarron, is advertised as being "genial in his ways, and affability," and the doctor is stated to be a "thoroughly reliable gentleman, and leads in his profession."

In the Portrait Biographical Album published in 1890, it is stated that in 1875 Mr. H. W. Spangler, who was Justice of the Peace and Notary Public of Perry, and was one of the most active members of the Methodist Episcopal Church, had accepted the principalship of the Perry schools, which position he held until 1877, when he associated himself in partnership with Dr. Surber, and they purchased the drug stock of A. F. Gratigny and operated the drug business together; after one year Mr. Spangler became sole proprietor. Mr. Spangler was subsequently secretary of the Kansas Pharmaceutical Association.

In the publication known as "The Torch," dated March 17, 1882, there is a review of the history of Cherryvale, and reference is made to the many advantages and inducements offered to persons seeking homes and investments there. The

first article refers to Richart & McDonald as possessing a roomy drug store, in which there is a glittering write-up of this firm, the author stating, after several columns, that he regrets the space will not permit the privilege of describing their new store as it deserves, and their perfect system of running their business; the establishment, it is said, "stands alone, and is as strong as the rock of Gibraltar."

In the "Jacksonian," special edition, Cimarron, Kan., Jan. 1, 1887, there appears the following: "A. E. Krum's Star Drug Store," speaking of this as being in its holiday attire; The Diamond Drug Store, R. S. Pinnegar & Co., referring to it as being a "shining sparkler of attraction and beauty"; Dr. J. W. Wade advertises as being a graduate of the Missouri Medical College of St. Louis, and the Medical Hospital of St. Joe, and the doctor is said to run a "city drug store."

In the Lawrence Gazette, July 21, is an account of the old business of B. W. Woodard, and refers to the business as a "relic of 1855"; a reprint of the business card is given, and the memories that cluster around it are as follows: It is stated that this no doubt is the oldest Kansas business card extant, representing the oldest business house in the state. It is a fair specimen of the typographical art, printed in 1855, and reads as follows: "B. W. Woodard, dealer in drugs, medicines, paints, oils, dyes, window glass ware, perfumery, etc., books, stationery, etc. Physicians, farmers, and dealers are invited to call and examine the stock and prices, which will compare favorably with those of St. Louis houses." This advertisement appeared when Lawrence was but a frontier hamlet, mainly composed of sod and shack houses, and states that the building "with open glass front, was considered a wonder of substantiality and its interior finish a triumph of ascetic taste."

Mr. Frank Faxon, the well known member of the present firm of Faxon & Gallagher, in response to the writer's request, has given an interesting account of his connection with the pioneer drug store as follows:

"I entered the employ of Mr. B. W. Woodard at Lawrence in the spring of 1863. At that time he had for his chief clerk Mr. George Leis, who was a studious fellow, and had made himself quite familiar with the U. S. Dispensatory and Parrish's Pharmacy. But he had never enjoyed the advantages of attending a pharmacy school. In August he left the employ of Mr. Woodard to accept a position as sutler's clerk in the army, which left me after little more than six months' experience head clerk and prescriptionist. I was between fifteen and sixteen years old and to me now it is a great wonder that Mr. Woodard could take such chances. I not only was trusted with the prescriptions in the day time, but slept in the store at night and was subject to calls at all hours. I think there must have been a special providence that watched over the doings of the drug clerks in those days. I suppose that I made some mistakes that I never knew of, and I know I made a few that came to my notice.

Filling a prescription one day, in which among other things, Aqua Font, was prescribed, the "n" in Font, looked like an "r," and I remember the satisfaction I felt when I saw at a glance that Aqua. Fort, was called for. It showed that I had already learned something. I prepared the prescription and used nitric acid instead of fountain water, but as you will readily guess, the contents of the bottle soon escaped and reached the ceiling without delay. While engaged in this early

prescription work I was of course closely watched by not only Mr. Woodard, but by the doctors whose prescriptions I was called upon to fill. I doubt if, at this time, there was a single graduate of pharmacy engaged in the drug business of the state of Kansas.

Two years after this time I was traveling in southern Kansas and was in a drug store when a customer called for one ounce of Tincture of Aconite Root. Upon his receiving it from the druggist he asked what the dose was, and after a slight hesitation the druggist replied, "O, about a teaspoonful." I interposed, the druggist took it all in good part, and it may be that a life was saved. At another time I entered another drug store conducted by a doctor. It was a very warm sultry day, and he was grinding something in a wedgewood mortar. He was smoking a pipe and perspiring freely. He said to me "I am having a lot of trouble today making these Dover's Powders," and no wonder, for with the Opium and Ipecac he was trying to incorporate Salt Peter Commercial, which is probably 75% Rock Salt, and on warm days a very moist article.

I think it was about 1857 that Mr. Woodward started a drug store in the Eldridge house at Lawrence and brought from New York City a man by the name of Rixer, who was a pharmacy graduate, and who displayed his diploma on the front of a very handsome prescription case in the new store. It was the first certificate of the kind that I had ever seen, and I doubt if there were a half dozen in the state of Kansas at the time.

There are many other druggists who helped to shape the career of pharmacy in the state, whose descendants have been written to for information, but unfortunately we have been unable to secure from them any replies. Perhaps at some future time more extensive and interesting data to this history may be secured.

DISCUSSION.

Prof. Sayre remarked in connection with his paper just read that the records seemed to show that Doctor Ayres was one of the first men who introduced his ague-cure into Kansas, and it was said that he had sold enough of it to buy a large area of land in the state, which he believed was still owned by his family. He said that in this history he noted what he had always said, that the doctors were responsible for a large part of the patent-medicines that were sold. The doctors that located there did not hesitate to put up patent-medicines and sell them, and in the papers of that far-away period the doctors sold under their own names various articles of this kind, and it was related of one doctor that he had emptied his medicine-chest and started a drugstore, putting up his medicines and selling them as a druggist would. Most of the doctors in those days dispensed their own remedies, and little more than that, and promulgated the idea of putting up medicines that continued to this day. In Lawrence, for example, it had not been so many years since a doctor, who had now passed away, had two or three patent medicines that he put up and sold all over the state. The doctors should not say that the druggists were the only parties responsible for the introduction of patent medicines. He really thought the physicians themselves were mostly to blame for the creation of the business.

Mr. F. W. Meissner, of Indiana, said he had not had the long experience that Prof. Sayre had had, but he could remember back a great many years, when there were very few proprietaries which were not put up by the doctors, and which did not bear the title of "Doctor So-and-So's Remedy." The doctors were largely responsible for the general sale of proprietary medicines. It had only been in the last decade or two that druggists had been putting up proprietary remedies to any extent.

Contributed and Selected

THE POTENCY OF FIRST-YEAR CULTIVATED DIGITALIS LEAVES AS INDICATED BY PHYSIOLOGICAL ASSAY.*

F. A. MILLER, B. S., AND W. F. BAKER, B. S., M. D.

The supply of many valuable medicinal plants once so abundant from natural sources is rapidly becoming or is entirely exhausted. This has been brought about by the destruction of the forests: the devotion of more and more of the waste lands to agriculture, and the destructive methods of harvesting without any thought or care to preservation. The supply was ample and little effort was made toward cultivation. Where attempts were made to introduce medicinal plants into other countries, soil and climatic conditions were often unfavorable. Many plant forms mature very slowly and several years must pass before the drug can be marketed. Possibly from this arose the belief that cultivated plants were less valuable than wild ones. The small returns to be had and the limited demand for the product has been responsible for the undevelopment of this form of industry.

In view of the advance now being made in plant culture and improvement, it is entirely within the realm of possibility that the desired constituents of drug plants can be increased and undesirable ones decreased or eliminated as is being done with many cultivated forms. In the case of some drugs, the active principles of which can be more or less closely paralleled by synthetic preparations it may be questionable as to the advisability of expending much energy upon their cultivation. The forms which contain neutral principles, glucosides, etc., cannot be so closely paralleled. In this class digitalis easily stands first. One of the factors in the way of its successful cultivation has been the belief that wild plants were more potent and this has been furthered by the Pharmacopœias of various countries. Some of these Pharmacopœias now admit cultivated leaves, but all require the second-year leaves at the time of flowering. This requirement appears to be founded more upon tradition than as a result of scientific investigation. This is a question of considerable economic importance. A larger quantity of leaves can be obtained from first-year plants, and if it can be conclusively proven that first-year leaves are as therapeutically active as the second, it will greatly shorten the period and the cost of production.

From a review of the literature, it appears that very little work has been done to determine the relative potency of first and second-year leaves.

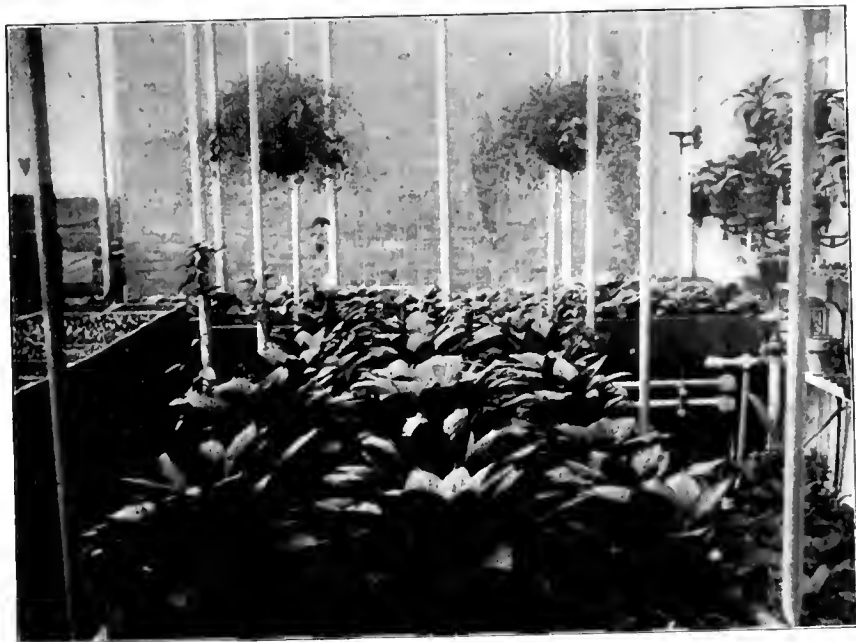
Duffield(1) in 1869 using chemical methods found American leaves superior to English and these in turn superior to German. Edmunds(2) assayed biologically, three U. S. P. tinctures made from English leaves and three from German

*Presented to Section VIII-b International Congress of Applied Chemistry, Sept., 1912.

leaves and found them to give values of 8-18-25 and 11-20-29, respectively. Ott(6) pointed out that Bohemian leaves were much more toxic than others.

Focke(3) found cultivated leaves to be 50% less active than leaves from wild plants. Allen's English leaves are garden grown and are recognized as quite active.

Hart(5) found first-year leaves to be 20% more toxic than second-year. Hale(4) reports some assays of first-year garden-grown leaves, one sample grown at Arlington, Va., in 1907, a second in 1909, and a third sample grown at Madison, Wis., in 1908. Each lot of leaves was reduced to a No. 60 powder and made into tincture according to the U. S. P. VIII. The M. L. D. per gram body weight by the one hour frog heart method, for Arlington, 1907, was 0.0050 cc.; for the 1909, 0.0050 cc., and for the Wisconsin, 1908, 0.0055 cc. These were

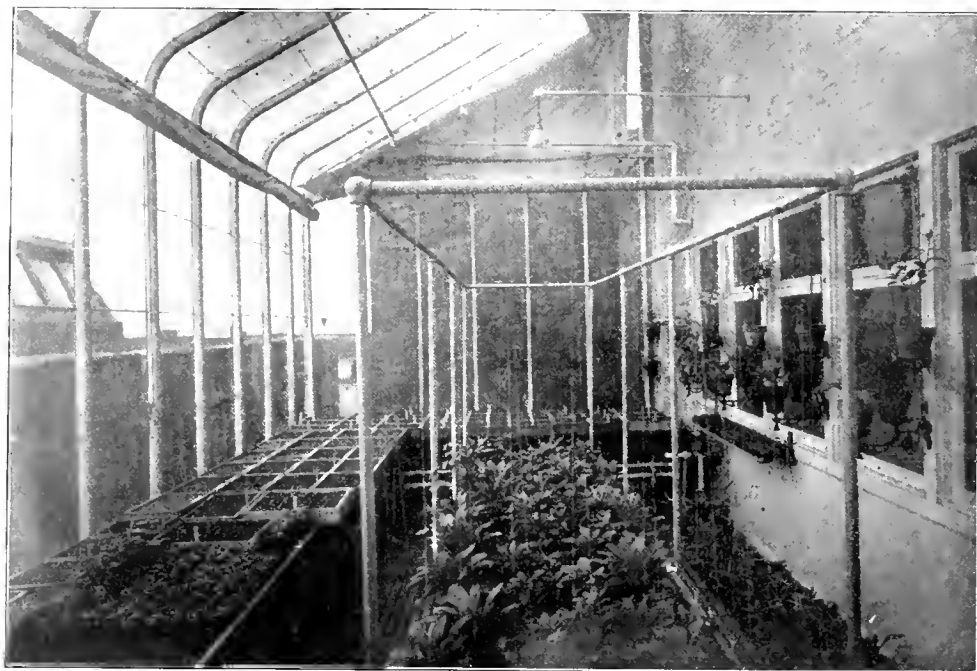


Digitalis Growing in Conservatory.

compared with a tincture made at same time from selected English leaves of second-year's growth. The M. L. D. for this was 0.0070 cc. He further reports a comparison of a sample of first year garden-grown with a sample of wild-growing second-year leaves from Seattle, Wash. The first-year leaves assayed 0.0060 and the second-year leaves 0.0085.

In view of these statements and of the approaching pharmacopœial revision it has been deemed advisable to publish the results of some assays of samples of first-year cultivated leaves and compare them with samples of selected commercial leaves. The samples tested were taken from plants grown from seed purchased of Henry A. Dreer, of Philadelphia. The botanical source is *Digitalis gloxiniaeflora* mixed. It is a well known fact that this form is a cultivated and improved gloxinia like strain of the official *Digitalis purpurea* L. It is probably

one of the oldest of the cultivated varieties of the genus *Digitalis* and for this reason should represent the average conditions which are to be expected in cultivated forms of this group. The seeds were planted June 10, 1911, and soon after germination were transplanted to two-inch flower pots. They were retained in these until the latter part of August of the same year when they were transplanted to a bed in the conservatory maintained at this laboratory. The bed was filled with a mixture of equal parts of clay loam and decayed vegetable substance with an admixture of a small amount of sand. The plants were grown continuously in this situation without the addition of any plant food until the second of February, 1912, when the leaves were collected for testing. The plants at this time appeared as large rosettes of luxuriant leaves. They were in perfect



Tested *Digitalis* Plants Growing in Center Bed.

condition and represented a considerable range in leaf variations as noted in about fifty plants. These plants including the three tested have been under observation and continuous cultivation throughout their entire existence and have responded perfectly to regular methods of cultivation. The leaves which were collected for testing consisted of about an equal mixture of fully developed and half-grown leaves. These when collected were designated as samples, B-994, B-995, and B-996. They were placed in a drying oven and the temperature slowly raised to 100° C. Drying was considered complete at the end of twenty-four hours. During an interval of twelve hours the temperature was lowered to 60° C. The leaves after being dried were reduced to No. 60 powder and exhausted with 75% alcohol. At same time and by same method tinctures were made from samples of commercial leaves designated as No. 1, 2 (cultivated), and 3. The alcoholic

strength was reduced to 25% before testing. Ten cc. of these tinctures represented 1 gm. of drug. The samples were all assayed at same time by the one-hour frog heart method at 20° C.

The results were as follows:

Sample	M. L. D. per gm. body weight
B-994	0.0050 cc.
B-995	0.0040 cc.
B-996	0.0030 cc.
No. 1	0.0040 cc.
No. 2 (cultivated)	0.0030 cc.
No. 3	0.0025 cc.
Orobain 1:10000	0.00000045 gm.

These results, although not conclusive, indicate that leaves from horticultural varieties are by no means inactive; that leaves collected prior to the flowering period may be nearly or quite as active as second-year leaves from the wild plants and that conservatory conditions do not materially lessen the activity. There also appears to be a marked variation in the activity of the individual plants. This condition if existent in commercial digitalis leaves may account in part at least for the variation that has been found to exist, both in the crude drug and its preparations. Whatever influence this individual variation may have upon the character and quality of the drug or whether it may ever be utilized in bringing about greater uniformity are matters of conjecture. This condition of variation, however, suggests a broad field for further investigations in the improvement of medicinal plants. If the active constituents of digitalis were found to be of an inherent nature a practical application of the methods of plant selection and breeding would be possible for the purpose of improvement. In this connection, it would be of great importance if the leaves of first-year plants of cultivated varieties could be utilized. These forms have already passed through the experimental stage which is always necessary to the successful introduction of any plant forms and would thus respond more readily to methods of breeding. The preliminary nature of this work, however, will not permit of a full discussion of the possibilities in drug plant improvement. It is sufficient to say that work of this nature has been undertaken in connection with the further testing of the many different species and varieties of digitalis. Seeds of these forms have been obtained not only from all the prominent sources of this country, but also from those of England, Germany and Japan. Individual plants of the various forms from these sources will be tested at different periods of growth and at different seasons. The three plants herein considered will be continued under cultivation and again tested at the time of flowering. At this time, these plants will be inbred and the seeds collected separately. The following year the progeny will be grown and tested separately for relative values and uniformity.

FROM THE DEPARTMENTS OF BOTANY AND EXPERIMENTAL MEDICINE, ELI LILLY & CO., INDIANAPOLIS, IND., JUNE, 1912.

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ELIXIR FERRI QUININAE ET STRYCHNINAE PHOSPHATUM— RAPID FORMULA.

THOMAS LATHAM.

Soluble Ferric Phosphate.....	17.500 gm.
Quinine Alkaloid	8.750 gm.
Strychnine Alkaloid	0.275 gm.
Alcohol	60.000 cc.
Boiling Water	60.000 cc.
Aromatic Elixir to make.....	1,000.000 cc.

Dissolve the strychnine in 20 cc. of the alcohol contained in a round Berlin dish of 250 cc. capacity by boiling briskly, using a rather small Bunsen flame in order to prevent the alcohol catching fire. Be sure that the strychnine is thoroughly dissolved, and make up the volume of the alcohol lost in boiling, then add the remainder of the 60 cc. and lastly the quinine. This latter quickly dissolves with a little heat. Add the Alkaloidal solution quickly (it also must measure completely 65 cc.) to 800 cc. of aromatic elixir, and shake a little.

Raise the 60 cc. of water to boiling, being careful, if the same dish is used, to clean it from the last traces of the alkaloids with a little alcohol.

Dissolve the Ferric Phosphate in the boiling water and add the solution to 125 cc. of aromatic elixir. Add the iron solution and this latter part of the elixir, mingled suddenly, to the 800 cc. alkaloid solution, and add enough aromatic elixir to make 1000 cc. Let stand a few hours. It will scarcely need filtering.

There is no doubt that this is a much better formula than the U. S. P. Its rapidity and simplicity leave nothing to be desired.

MICROSCOPICAL ANALYSIS OF ASPIRIN AND ACETYL SALICYLIC ACID.*

WILLIAM MANSFIELD, A. M., PHAR. D., NEW YORK CITY.

Aspirin (Bayer) of Farbenfabriken von Elberfeld Company, is the copyright name of acetyl salicylic acid prepared by the process granted under the patent. Salol, the patent rights of which have run out, was replaced by Aspirin, which is supposed to be a great improvement on the older compound in that it has no deleterious action on the heart. Aspirin is widely advertised and used today as a remedy for colds, grippé, etc. During the past few months there has been much discussion concerning aspirin, it being claimed by its importers that the substitution of acetyl salicylic acid (Heyden) was a very common practice. The importers have, in fact, prosecuted and secured the conviction of one or two men. It has been reported more than once that very often a person accused of substituting, did so innocently, as he was dispensing what he thought and what he believed to be true aspirin (Bayer).

The origin of some of these samples could be questioned, they not having been procured from reliable sources. Substitution is a practice condemned by honest

*Reprinted, by permission, from the Practical Druggist.

pharmacists, and that means the larger percentage of the members of the pharmaceutical profession. Pharmacists are men of right principles and high ideals, and they feel it more keenly than any one outside the profession, when one of their number is proven to be dishonest. A man cannot receive his college diploma and his State Board of Pharmacy license unless he is of good moral character, and no one will question that the colleges and State Boards of Pharmacy enforce this condition. Show the average pharmacist the right and the wrong way, and he will invariably choose the right way. If he makes mistakes, as we all do at

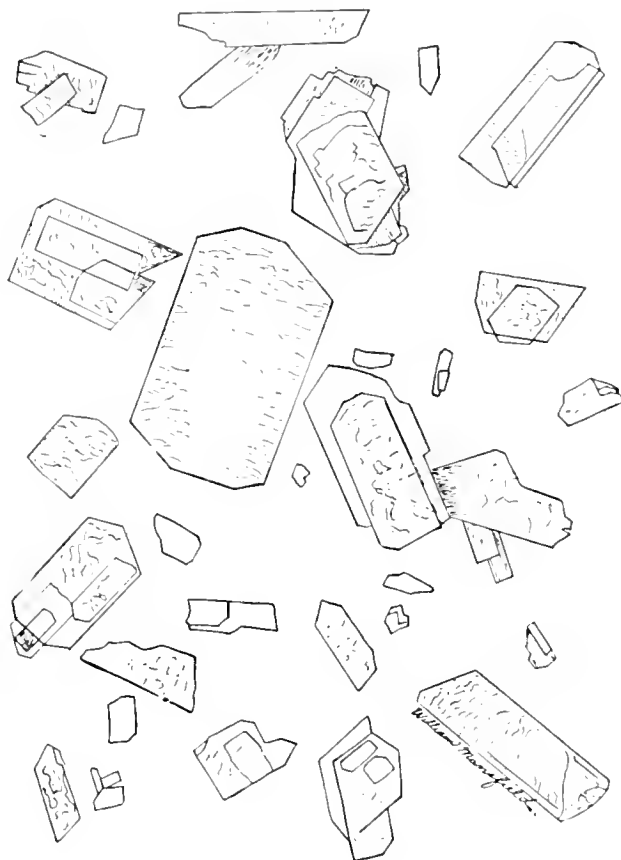


Fig. 1.—Aspirin (Bayer).

times, it is unknowingly. In several cases where acetyl salicylic acid was dispensed for aspirin, the druggist believed that aspirin was put in the prescription.

It has been generally understood that there is no known method of distinguishing Aspirin (Bayer) from acetyl salicylic acid (Heyden). After very careful investigation it seems proven that there is no chemical means of distinguishing between these two compounds. With these facts in mind, I began to study the two chemicals in question, in order to ascertain if it were not possible to differentiate between them, by means of the compound microscope. After a very careful study of several specimens of large crystals and fine powders of aspirin and acetyl salicylic acid, I found that there was a decided difference in the microscopic

structure of the two compounds. The charts which were made from authentic samples will bear out my statement. In order to be perfectly certain of the practicability of this method of analysis, samples marked a, b, c, etc., were examined, the source of which being unknown to the examiner. The result of such examinations showed in every case the true source of the powder, i. e., whether Aspirin (Bayer) or acetyl salicylic acid (Heyden).

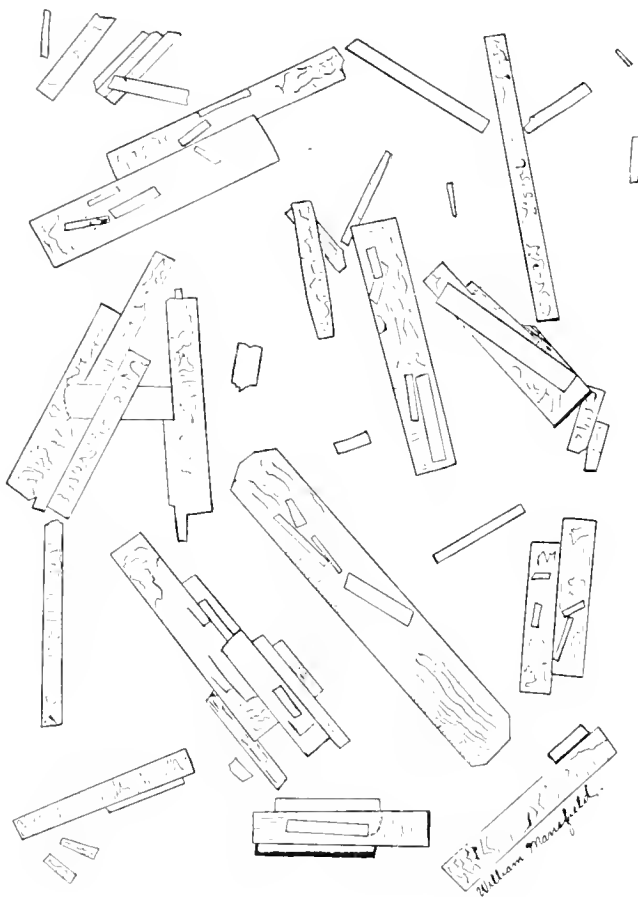


Fig. 2.—Acetyl Salicylic Acid (Heyden).

In making this test, simply add a small quantity of the crystals or powder to a clean slide, add a drop of water, mix and cover with a cover glass.

True Aspirin (Bayer) under the microscope shows numerous thin, broad crystals, two or more of which are often superimposed, lying parallel or crossing at various angles; the ends are either blunt or two or three angled; broad, irregular pieces are seen throughout the field, and many small, irregular fragments of larger crystals.

Acetyl salicylic acid (Heyden) under the microscope shows elongated, thick, narrow, rod-shaped crystals with blunt ends, occurring singly or in groups of two or more, which are frequently superimposed and usually lie parallel and in prac-

tically every group there will be crystals of variable size, some so small that they are scarcely visible under the high power. Among the perfect crystals are numerous broken fragments of large and small crystals, retaining, however, the characteristics of the larger crystals.

THE CHEMISTRY OF ASPIRIN OR ACETYLSALICYLIC ACID

OTTO RAUBENHEIMER, PH. G., BROOKLYN, N. Y.

The flowers of *Spiraea Ulmaria* L., Meadow Sweet, or Queen of the Meadow, which were formerly official in the French Codex, 1884, and which as *Flos Spiraeae* are still official in the fourth edition of the Swiss Pharmacopoeia, contain methyl salicylate, and used to be the source of salicylic acid, which was isolated, from the flowers, by Löwig in 1839.

Acidum Spiricum is even today a synonym for salicylic acid, and *Spirin*, the active principle of *Spiraea*, denotes the same.

The prefix "A" in Aspirin stands for "Acetyl" and the meaning of the coined word "Aspirin" is consequently "*Acetylsalicylic Acid*."

The author cannot help but admit that the short and euphonious word "Aspirin" is coined in a very clever and scientific way.

That this name is very valuable as a trademark can be appreciated. The word Aspirin has been registered as a trademark in Germany as Warenzeichen No. 36,433, in Austria, Wortmarke No. 1899 399, and in the United States as Trademark No. 32,805.

The owners of this trademark are the manufacturers Farbenfabriken vorm. (formerly) Friedr. Bayer & Co., Elberfeld, Germany, and in the United States, The Farbenfabriken of Elberfeld Co., New York City.

In 1853 *Gerhardt*² was the first to prepare this chemical from acetyl chloride and sodium salicylate, and named same "Anhydrous Salicylic-Acetic Acid (wasserfreie Salicylsäure—Essigsäure.)" Although he did not give any further details of the constitution of the new substance, he was of the opinion that it was an anhydride of the two acids. In 1859 *von Gilm*³ reported the discovery of a crystalline substance from chloracetyl and salicylic acid, and named the same "Acetitized Salicylic Acid" (acetylierte Salicylsäure).

In 1869 *Kraut*⁴ determined the constitution of the chemical and named it "Acetylsalicylic Acid" (Acetylosalicylsäure).

On December 22, 1898, Newton took out an English patent on the preparation of acetylsalicylic acid. In 1900 Hoffman, of the Farbenfabriken Elberfeld obtained a patent "for a medicinal body whose trade name is aspirin, a product of coaltar, otherwise known as acetylsalicylic acid."

Hoffman discovered a waterless process by which a pure chemical was obtained. Although impure acetylsalicylic acid had been known long ago, Hoff-

¹ Reprinted from the Practical Druggist, Dec., 1912.

² Gerhardt: Untersuchungen über die wasserfreien Säuren. Ann. der. Chemie 87, 162 (1853).

³ von Gilm: Acetyl-derivate der Phloretin-und Salicylsäuren. Ibid 112, 180 (1859).

⁴ Kraut: Über Salicylverbindungen. Ibid 150, 9 (1869).

man was the first to prepare and patent the pure chemical and his patent which has been contested several times, has been upheld by the courts. Since then aspirin or acetylsalicylic acid has become a very valuable remedy in therapeutics and is used all over the world.

Acetylsalicylic acid is officially recognized in the following pharmacopœias and standard works under the title:

Acidum Acetylosalicylicum: Pharmacopœia Helvetica IV, 1908; Danica VII 1907; Svecica (Swedish) IX, 1908; Hungarica III, 1909; Deutsches Arzneibuch V, 1910.

Acidum Acetylsalicylicum: Codex Medicamentarius Gallicus (French) V, 1908.

Acidum Salaceticum: British Pharmaceutical Codex I, 1907.

Acidum Acetyl—Salicylicum: British Pharmaceutical Codex, II, 1911.

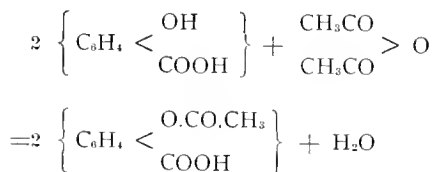
Besides the titles just mentioned, acetylsalicylic acid is also known under the following names: Aspirin, Acetosalicylic Acid, Acetosalin, Acetysal, Aletodin, Salacetin, Saletin, Salicyl-Acetic Acid, Xaxa, etc.

Acetylsalicylic Acid is the acetyl derivative, or monoacetic acid ester of salicylic acid.



It is manufactured by heating 50 parts of salicylic acid with an excess or about 75 parts of acetic anhydride for about 2 hours at 150° C. (302° F.) under a reflux condenser, or on a large scale in an autoclave.

The following reaction takes place:



In order to bind the formed water, anhydrous, fused sodium acetate is added.

The excess of acetic acid is removed by distillation. Upon cooling the acetylsalicylic acid separates in crystals, which are purified by crystallization from chloroform. The author might state here that there are also other processes in use to manufacture acetylsalicylic acid, which, however, we cannot describe at this time, owing to the limited space.

The Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, manufacture the chemical under the German Patent, D. R. P., No. 85,565, and the Farbenfabriken of Elberfeld Co., New York City under the U. S. Patent No. 644,077, of February 27, 1900, which expires in 1917. This is a so-called "product patent" in which the word "Aspirin," which is also trademarked, identifies the acetylsalicylic acid manufactured by this firm. Nobody else has the right to manufacture this chemical in the United States or to sell this chemical as "acetylsalicylic acid" or under any name whatsoever. And furthermore nobody has the right to use acetylsalicylic of anybody else's manufacture during the life of this product patent in the United States. In the opinion of the writer these points should be well borne in mind by druggists and pharmacists in order to save

serious trouble. For the benefit of those who have made objections to foreign chemicals, etc., because they were not manufactured in the United States by American workmen and American machinery, we might mention that Aspirin is manufactured at the Hudson River Aniline Color Works, Albany, N. Y., a fact which has only lately come to our attention.

It occurs in colorless small shining crystals or as a white crystalline powder. The author begs to point out that the shape of the crystals and also in the powdered condition under the microscope differs according to the process of manufacture. It should be odorless and should not be used when it has an acetic odor, which might be due to careless manufacture or to decomposition through the influence of heat or moisture. Its taste is sweet and acidulous. Melting point is about 135° C. (275° F.) The author wants to emphasize "*about*," as much has been written on this very point.⁵

The Swiss Pharmacopœia of 1908 and the Swedish of 1908 do not give the melting point at all. The French of 1908 states 135° C. and the Danish of 1907 and the German of 1910 state "*about*" 135° C. According to the experience of the author the melting point is 135° C., after the acid has been thoroughly dried, viz., over sulphuric acid. It is also well to remember that by melting the chemical will be decomposed; so that the same sample will melt at about 125° C. at the second melting. A slight decomposition also takes place when heated to 100° C. In determining the melting point of acetylsalicylic acid or aspirin it is well to take the precaution to rapidly heat to about 125° C. and continue to gradually increase the temperature one degree per minute.

The melted acetylsalicylic acid solidifies again at about 70° C.

On ignition it should leave no residue. The German Pharmacopœia permits 0.1 percent, i. e., by igniting 1 gm., the residue should not be over 0.001 gm. practically no residue.

SOLUBILITY:	Water.	Alcohol.	Ether.	Chlorof.
Helv. IV.....	Sparingly	5	Freely	Freely
Fr. Cod, 1908.....	125	Very	Very	
N. N. R. 1915.....	100	Freely	Freely	
B. P. C. Ex. II.....	300	5	Soluble	Soluble
D. A.-B. V.....	300	Freely	20	

It is sparingly soluble in cold, but very soluble in hot benzol, and freely soluble with decomposition in solutions of alkalis and alkali carbonates. According to experiments of the author its solubility in chloroform is about 1 in 25 parts.

The aqueous and alcoholic solutions decompose on standing, forming salicylic and acetic acids. This decomposition takes place readily when heat is used and very rapidly in alkaline solutions.

REACTION: The aqueous solution is acid to litmus.

TESTS OF IDENTITY.

(a) The principal test of identity is based on the hydrolysis or decomposition into its constituents. Boil 0.5 gm. with 10 cc. solution of sodium hydroxide (15%) during 2 or 3 minutes, thus forming sodium salicylate and acetate. On cooling add an excess of diluted sulphuric acid which will precipitate crystals of

⁵ H. Dichgans: Acidum Oecetylo-Salicylicum. Ph. Ztg., 1909, 47 Utz, Aspirin, Ph. Zhalle 43, 451 (1902). Madsen, Aspirin, Ph. Ztg. 1909, 210.

salicylic acid, which upon washing and drying should have a melting point of 157°C . An aqueous solution of these crystals assumes a violet color by the addition of ferric chloride T. S. The liquid portion which was separated from the salicylic acid crystals contains acetic acid, which is detected by its odor and also by the formation of acetic ether upon boiling with a little alcohol and concentrated sulphuric acid.

(b) Other tests of identity are as follows: A saturated cold aqueous solution is neutralized with sodium carbonate T. S. The liquid thus obtained, which, however, must not be alkaline, but can be slightly acid, by the addition of ferric chloride T. S. produces a light brown precipitate, and lead acetate T. S. produces a white precipitate. The liquid is not changed by barium nitrate T. S. or mercuric chloride T. S.

(c) Upon warming about 0.25 gm. together with a little dry calcium oxide in a test tube the odor of phenol will be noticed.

TESTS OF PURITY.

(a) Absence of free salicylic acid: A cold solution of 0.1 gm. in 5 cc. alcohol and diluted with 20 cc. distilled water should not be colored violet by the addition of one drop of a diluted ferric chloride solution 1:25. The precaution must be used to employ a fresh solution of acetylsalicylic acid, prepared cold.

(b) Absence of free acetic acid: This can readily be detected by its odor. As pointed out under "Properties," acetylsalicylic acid should be odorless.

(c) Absence of hydrochloric acid and chlorides.

(d) Absence of sulphuric acid and sulphates.

(e) Absence of heavy metals.

(f) Resinous impurities: Dissolve about 0.5 gm. in alcohol and allow to evaporate, well protected. The residue should be colorless, especially at the edges.

(g) Organic impurities: It should form clear and colorless solutions with water, alcohol, sulphuric acid and nitric acid.

(h) Absence of phenol: A solution of 0.5 gm. in 10 cc. sodium carbonate T. S. is shaken with about 5 cc. ether, and the ethereal layer is then separated. Upon evaporation only traces of residue should remain, which should be odorless.

ASSAY.

According to the Swiss Pharmacopœia: If 1 gm. is boiled for 3 minutes with 15 cc. normal sodium hydroxide volumetric solution and a few drops of phenolphthalein T. S. are added when cool, then 38.6 to 38.9 cc. of tenth-normal hydrochloric acid volumetric solution should be required for neutralization. A more correct method, in the opinion of the author, would be to make at the same time a blank titration between the alkali and the acid. The addition of salicylic acid and also the presence of not esterized molecular amounts of acetic and salicylic acid reduce the required volume of NaOH, while free acetic acid increases same.

EXPERIMENTS.

The author obtained different samples of acetylsalicylic acid in crystals and in powder, and also of aspirin, and subjected them to the above tests, and has reached the conclusion *that both are identical chemically*, although some difference

in the melting points of the examined samples of acetylsalicylic acid seem to indicate a greater or lesser degree of purity. The question has also arisen if Aspirin-Bayer contained a "tracer" in order to distinguish it from the acetylsalicylic acid of other manufacturers. Up to the present time the writer has been unable to detect such a "tracer."

INCOMPATIBILITY.

From the standpoint of a pharmacist the editor of *The Practical Druggist* takes this opportunity to mention the principal incompatibilities, namely, heat, moisture, alkalies and their carbonates and bicarbonates.

Acetylsalicylic acid or aspirin should be preserved in well-stoppered bottles in a dry place. The author must express his surprise that the manufacturers who in former years employed bottles have discarded the same and are now using cartons as containers.

When aspirin powders are ordered it is best to dispense these in parchment paper, so as to prevent decomposition through the influence of moisture.

PRESERVATION OF SPIRIT OF NITROUS ETHER.

C. B. JORDAN, PH. C., B. S., M. S., LAFAYETTE, IND.

I know that this is an old subject and you may feel that it has been threshed to the limit, yet there are many druggists today who do not keep this preparation under the proper conditions, either because they do not know how to do it or because they do not care to take the little time necessary to do it. Hence this discussion.

With sample No. 1 we tried to duplicate the condition found in many drug stores. The solution was kept in a pint, colorless bottle in the laboratory and opened from time to time to remove some of the solution. You will note that this solution lost 31 percent from December to February. In the case of samples Nos. 2 and 3, kept in 1-oz. full bottles sealed with sealing wax and paraffin and stored in the basement, you will note that from December to May these solutions lost but 4.4 percent. Samples Nos. 4, 5 and 6 were kept under similar conditions to those of samples Nos. 2 and 3, except that the bottles were one-half full. You will note that these samples lost from 9 to 12 percent in a little over a month. In the case of the rest of the samples, we attempted to determine whether this solution would keep better if made with stronger alcohol. It has been claimed that the small amount of water in U. S. P. alcohol causes hydrolysis and therefore more rapid decomposition of this product. The results of our experiments do not seem to bear this out. However, we have not done sufficient work with this to feel sure that we are right.

In conclusion, I would say that this solution will keep very well if put up into 1-oz. or 2-oz. bottles, the bottles filled and sealed with sealing wax or paraffin and stored in a dark, cool place. Many druggists think that this is too much work. This is a very wrong idea. I think that, if you try it, you will find that,

STUDY OF THE BEST CONDITIONS FOR KEEPING SOLUTIONS OF SPIRIT OF NITROUS ETHER.

All samples made from Smith, Kline & French concentrated tubes of ethyl nitrite.

Samples		Location	Dec. 14, 1911	Jan. 5	Jan. 10	Jan. 17	Jan. 24	Feb. 11	Feb. 22.	Loss %
1 tube made up to pint and conditions found in drug store, duplicated..... Bottles full 1 oz. plain bottles sealed with sealing wax. Bottles full 1 oz. full bottles, sealed with paraffin, color- less bottles 2 oz. amber bottles, one-half full, sealed with sealing wax 2 oz. amber bottles, one-half full, sealed with sealing wax 2 oz. colorless bottles, one-half full, sealed with paraffin	Laboratory	4.2	4.13	4.04	3.9	3.69	3.37	2.89	31.0	
	Basement	3.82	Feb. 15 3.64			Mar. 8 3.71		May 8 3.65	4.4	
	Basement	3.83	3.89			3.79		3.65	4.4	
	Basement	3.82	....			3.46		....	9.5	
	Laboratory	3.82	....			3.39		....	11.3	
	Basement	3.82	....			3.35		....	12.3	
Bottles Alcohol										
Kept in 8 oz. bottles	Amber 99.18%	Laboratory				Feb. 22 4.48	Mar. 22 4.26	Apr. 10 4.27	May 8 3.93	12.2
	Colorless 99.8%	Laboratory				4.48	4.24	4.35	3.98	11.2
	Colorless 98.2%	Laboratory				4.36	4.39	4.21	3.87	11.2
	Amber 98.2%	Laboratory				4.36	4.22	4.24	3.89	10.8
	Colorless 95%	Laboratory				5.38	5.01	5.29	5.01	6.9

when your solution is made up, it will take but 10 or 15 minutes to store it as directed, and then you will feel reasonably sure that your product will bear careful inspection and that your customers receive what they pay for.

The fact that many doctors do not prescribe spirit of nitrous ether today because they feel that they cannot get a standard preparation, casts a reflection upon the ability and carefulness of the druggist. I believe that the druggist will be more than repaid for the little time he spends in taking precautions to keep his stock under the conditions necessary to insure the best possible preparation, and perhaps in no case are precautions more necessary than they are in the keeping of spirit of nitrous ether.

WHAT IS MEANT BY DRUG STANDARDIZATION?*

F. E. STEWART, PH. G., M. D., PHILADELPHIA, PA.

A visiting physician of one of the large Philadelphia hospitals called me up by 'phone for information regarding the failure of fluidextract of apocynum to relieve dropsy in three patients under his care. Finding that he did not know whether or not the fluidextract had been standardized I suggested the use of a standard preparation. Three or four days afterward my medical friend again called me up to report that the standardized fluidextract procured at my suggestion was promptly effectual, and said, "If standardization means so much for other drugs it is about time for the medical profession to awaken to its importance."

A prominent Canadian physician to whom I was demonstrating the modern methods of drug standardization in the laboratory said, "The medical profession knows in a general way that drugs vary in strength but only few physicians are aware of the wide variations in such important drugs as digitalis, strophanthus, and apocynum demonstrated here today. We know that bicarbonate of sodium is pure and other lots are purer. This is about my limit of knowledge, but that digitalis fluidextracts on the market may vary 300 percent in active constituents, and strophanthus fluidextracts show a variation of 6000 percent is an eye-opener to me."

The importance of drug standardization is so great that all intelligent persons, laymen as well as members of the medical and pharmaceutical professions, should be informed of its value. For without this knowledge physicians do not realize the necessity of discriminating in favor of standardized products when prescribing, pharmacists do not appreciate the necessity of standardizing their products, or purchasing their supplies from manufacturing houses engaged in standard-work; and people ignorant of the fact that preparations of the same name may differ so widely as to be dangerous to life, take prescriptions to drug stores where they can get them compounded the cheapest, without regard to the character, quality and strength of the ingredients that enter into them.

One of the first things of importance to consider in drug standardization is nomenclature. To every drug a name must be given by which it may be in-

*Read before the National Dental Association, Washington, D. C., Sept., 1912.

variably known and dealt in. The Latin language is generally employed because it is a dead language and is not liable to change, as in the case of a living language.

The name adopted must belong to the common language of science and not be commercially controlled. So-called trade-mark names or trade names do not meet the requirements of science. If the product is not provided with a scientific name proper standardization demands that the scientific societies should name it, or the government might well do so in connection with the enforcement of the pure food and drugs law.

As for the trade-names, text books are adopting them as general appellations or synonyms without protest from the manufacturers, who, therefore, cannot justly complain if competitors adopt them for describing identical products.

Botanical standardization is absolutely necessary in establishing the identity of vegetable drugs. *Capsicum fastigiatum* is the botanical name for the variety of capsicum designated by the U. S. Pharmacopocia. Capsicum indicates the genus, fastigiatum the species to which the plant belongs. In relation to medicinal chemicals the U. S. P. gives in the "purity rubric" the amount of permissible innocuous impurities in each case. More than this amount the substance must not contain to comply with the U. S. P. standard.

Preparations of chemical drugs are standardized by chemical assay. The same applies to preparations of vegetable drugs containing active principles susceptible to assay chemically.

But there are a number of important preparations of drugs which cannot be satisfactorily standardized in this manner. I refer to the preparations of digitalis, aconite, cannabis indica, convallaria, ergot, gelseminum, lobelia, squill, strophanthus, and veratrum. These preparations are standardized physiologically by tests on animals.

Physiological or pharmacodynamic standardization is likewise employed for standardization of the adrenal glands, thyroid glands, etc.

Antitoxin and curative sera are also standardized physiologically, bacterins (bacterial vaccines) are standardized by bacterial count. The strength of old tuberculin is approximately determined by clinical tests and the same applies to small pox vaccine, while the newer tuberculin, "T. R." and "B. E." are standardized by determining the content in solid substance.

The Food and Drugs Act of June 30, 1906, made the United States Pharmacopocia and the National Formulary official standards for interstate commerce in drugs and medicines. Most of the states have enacted similar legislation. Consequently drugs and preparations sold under the U. S. P. and N. F. names, must be made in accordance with the standards laid down by these authorities or they are misbranded and liable to seizure by the government. Manufacturers and dealers who do not follow these standards are amenable to the law.

The national law and the laws of most of the states, permit the sale of products differing from these standards if the differences are plainly stated on the labels. Some of the state laws are more strict and permit no deviation.

By way of illustration let us consider the method of physiologically standardizing fluidextract of apocynum. Apocynum belongs to the group of so-called heart tonics of which digitalis is the chief exponent. I have two reasons for consider-

ing apocynum first, one is, it permits a continuance of my story relating to the use of this drug in the treatment of dropsy in the clinical service of my medical friend; and the other is the opportunity of pointing out the advantage of physiologic tests for a drug not properly standardized botanically.

Fluidextract of Apocynum is the U. S. P. name for a preparation of the "dried rhizome" and roots of *Apocynum Cannabinum*, "or of closely allied species of apocynum," and is made by percolating the dried and powdered drug with a mixture of alcohol, water and glycerin. The Pharmacopoeia directs that each cubic centimeter of a fluidextract shall contain the active constituents of one gram of the drug from which it is prepared. Fluidextract of Apocynum should therefore represent the drug volume for weight. In other words, one minim (drop) should approximately represent in activity one grain of the dried and powdered drug.

Apocynum is commonly known as Canadian hemp, or black Indian hemp, and is also called incorrectly "Indian Hemp." It belongs to the Apocynaceae or dogbane family.

This remarkable family of plants consists of about 130 genera, including more than a thousand species, growing abundantly in most tropical countries, thence decreasing, rare in temperate regions. The plants are trees or erect climbing shrubs, rarely perennial herbs, and are among the handsomest, and many of them among the most fragrant in the vegetable kingdom, and are largely used for decoration. Otherwise, except for a few edible fruits, and the rubber-yielding species (African rubber is chiefly the product of this family) interest is almost entirely in the medicinal and poisonous properties.

So numerous and abundant are these plants; and so generally and intensely poisonous are they that their appearance should be noted by every one to be avoided. A botanical description will exceed our space limit.

The active constituents are glucosides, which may be encountered in any of the plant-parts, but are especially common and abundant in the bark and seeds. These are very common agents of criminal, military ordeal, and legal poisoning among savages, and accidental poisoning by them is not infrequent. Some of the most powerful arrow poisons are derived from this family.

We are in complete ignorance as to the species of *Apocynum* which should yield this drug. Up to a very recent period, five or more distinct species were included under the name *A. Cannabinum*, even in our standard botanical works, and the plants themselves are not distinguished. It is therefore impossible to ascertain which species yields the different drugs whose actions have been reported under that name. This fact doubtless explains, in great part, the conflicting testimony regarding the medicinal activity of the drug.

The drug as it appears on the market is of indefinite length, 1.8 to 1.3 inch thick, cylindrical, wrinkled, fissured, orange brown, becoming gray-brown on keeping, almost inodorous, taste starchy, afterward becoming bitter and somewhat acrid.

The active constituents are the bitter glucosides, apocynin and apocynin. Its effects are similar to digitalis (commonly called foxglove).

Apocynum is usually given in the form of fluidextract, the average dose of which is five minims.

Now it must be very apparent to any thinking person that fluidextract of apocynum when prepared from a drug not properly standardized botanically is a very uncertain preparation. As already stated, we are in complete ignorance as to the species of *Apocynum* which would yield this drug, so we are not sure when purchasing it that we have the species containing the glucosides to which its medicinal value is due. No way is provided by the Pharmacopoeia for determining whether these constituents, and how much, are present. Even though an assayed drug should be employed no directions are given to ascertain whether the finished preparation contains them in proper amount. Unless the finished fluid-extract is subjected to standardization the dose of five minims may be too large, or, on the other hand, the preparation inert.

Is there any wonder under such circumstances that the hospital physician who called me up did not obtain satisfactory results from fluidextract of apocynum in the treatment of dropsy?

But a very different report followed the substitution of a standardized fluid-extract. The dropsy which threatened the patient's life commenced at once to yield and the heart and kidneys resumed their functions. Let us therefore consider how fluidextract of apocynum is standardized.

Apocynum belongs to the so-called "Digitalis Series" which includes digitalis, or foxglove, apocynum, convallaria—commonly known as lilly-of-the-valley—squill, and strophanthus.

The drugs of this group have the peculiar power of stimulating the heart, and are of enormous value in the treatment of certain diseases of the heart and kidneys.

When given in medicinal doses they cause the heart to contract with greater force and empty itself thus restoring the circulation of the blood to the kidneys and other organs in case of heart weakness.

This property of strengthening the heart's action is invaluable in dropsy in which impaired circulation is a prominent factor. By its action on the heart and arterial system—which is in fact a continuance of the heart on account of its muscular walls and power of aiding the circulation by contracting—such drugs as apocynum, digitalis, and strophanthus, also act as diuretics. Forcing more blood through the kidneys they aid in purifying the blood of uræa—the ash of tissue waste—and preventing death from uremic poisoning.

By their use the most severe forms of dropsy may often be quickly relieved, and the weak and dilated heart restored to normal action, and the patient at death's door returned to fairly good health and continued many years in a life of usefulness.

The first step in standardizing preparations of drugs is to assay the crude drugs before purchasing. The manufacturer of standardized drug preparations would soon find himself out of pocket if he neglected this precaution. Drugs are of value in direct proportion to the active principles they contain, and these constituents vary in different lots.

The next step consists in assaying finished products and adjusting the amount of active principles present to fixed standards. This is accomplished either by chemical assay or by physiological tests on animals, or by both methods, one being used as a control for checking results obtained by the other.

A number of the physiological methods for standardizing the digitalis series of drugs are in use, among which is the so-called "lethal dose" method of Reed and Vanderkleed.

The first step in this method consists in determining the lethal dose; this is accomplished in the following manner: A series of guinea-pigs is selected each weighing approximately 250 grams. The preparation to be tested, if a tincture or fluidextract, is then freed from the greater part of alcohol by evaporation, and diluted with water to the desired quantity. Into a series of four of the guinea-pigs this dilution is now injected in amounts equal to $9/10$, $10/10$, $11/10$, and $12/10$ of the standard lethal dose. The animals are then placed in cages and allowed to remain for twenty-four hours, when they are examined and a note made of those living and those which are dead.

The result of this preliminary test, in which the range of dosage is quite wide, enables the investigator to form some idea as to the strength of the preparation. Basing the dosage upon these results, other series of guinea-pigs are injected with progressively increasing or decreasing doses, as the case may be, still further diminishing the variations between doses, until the smallest amount is found which will prove fatal within twenty-four hours. The probable minimum lethal (toxic) dose of the preparation, unless it deviates considerably from that of the standard, is generally obtained by one or two series of injections.

In order to express the percentage results it is necessary to adopt for each drug or preparation assayed a standard minimum lethal dose (m. l. d.) with which the preparation being tested may be compared. For example, the m. l. d. of fluidextract of digitalis is 0.1 cc.; that of fluidextract of strophanthus, 0.0025 cc.; that of tincture of strophanthus, 0.025 cc.; that of fluidextract of apocynum, 0.075 cc.

After comparing the preparation to be standardized with the standard m. l. d., it is diluted or concentrated if necessary to bring it down or up, as the case may be.

As already stated, digitalis fluidextract on the market may vary 300 percent in strength. This fact was stated in Bulletin No. 48 issued by the U. S. Bureau of Hygiene, Washington, D. C. Later researches show the variation to be from 30 to 400 percent.

Now digitalis is one of the most important drugs in the treatment of diseases of the heart and kidneys, and conditions often arise in practice when the patient's life is entirely dependent upon its prompt and decided action.

Accuracy in dosage is essential. Unless the dose is large enough to produce the required effect upon the heart and circulation, failure results. If the dose is too large the patient dies of digitalis poisoning.

Imagine the danger resulting from neglect to use standardized digitalis preparations. The patient takes the prescription to the druggist who secured his pharmaceutical education before the advent of the modern drug standardization and obtains a fluidextract or tincture below standard. The dose prescribed fails to relieve the patient and is therefore increased. We will assume that the tincture is prescribed in 15-drop doses. This dose failing to relieve, 20 drops are given, to be rapidly and progressively increased for effect until 60 drops are used per dose and the same administered three times a day.

After a week or more the vial is emptied and the patient sends to the drug

store for renewal of prescription. In the meantime, the druggist has purchased a fresh supply of tincture of digitalis which happens to be three times as strong as the weak preparation first used. The patient goes on with the 60-drop dose as before. But now he is taking three times as much drug at a dose, or an amount equal to 180 drops. The toxic action of the drug soon manifests itself, the patient grows worse and worse, and finally dies in convulsions which are ascribed to uremia, when they were in fact, due to digitalis poisoning.

"How careless the doctor—how careless the druggist"—say you. Nay. Rather say, "How ignorant and negligent are both of the importance of drug standardization."

Or, the physician fearing to give larger doses of digitalis than that laid down in the text books as a maximum, goes on with his ineffectual dosing, and the patient finally dies in uremic convulsions. In either case death is the result, and the cause is the same, namely: Want of standardization of the digitalis preparation employed.

It may be asked why not separate the active constituents and use them for medication instead of trusting to the uncertain fluid preparations of the drug? There are insurmountable difficulties in the matter; in the first place, the active principles of digitalis are only partially known, and the isolation of those with which we are acquainted is attended with considerable difficulty. There appear to be at least four glucosides in digitalis which possess the characteristic action on the heart and circulation, and these are accompanied by one or more glucosides decidedly different in their effect. The therapeutic action is composite and is due to the combination of a number of principles which act and react on one another to produce the characteristic effects of digitalis as a therapeutic agent, therefore the only way to be sure of obtaining the desired effect is to use a physiologically standardized preparation of digitalis itself.

Therapeutic standardization by the cooperative investigations and impartial discussions of competent observers are necessary. Progress in materia medica science is dependent upon it, and public welfare demands it. How can we as physicians meet our obligations in this regard when new products are controlled commercially and introduced by advertising? Until some plan is adopted for the protection of professional interests impartial discussion is impracticable. If reports concerning advertised products are adverse there is a danger of law suits, if they are favorable there are suspicions of purchase. A strong central board of control representing commercial, as well as professional interests, is urgently needed to prevent dishonest exploitation of common interests by selfishness.

One of the problems of standardization is to prevent the finished product from deterioration on account of the action of the air. Preparations of ergot, digitalis, strophanthus, aconite, and several other important drugs soon lose their strength on this account.

It has never been realized until lately that most of the deterioration going on in fluids, owing to the action of the air, is due to the air held in the fluid rather than to the air in contact with the fluid in the container.

For example, a container may be completely filled with a fluid and then hermetically sealed, yet the oxygen of the air in the fluid will continue to act and cause its deterioration.

Researches were made in the Mulford Laboratories by Pittenger and Vandervekleed to determine the influence on deterioration of exhausting the air from fluids and then sealing them hermetically under vacuum.

Fluidextract of ergot was chosen for the experiment. First of all, the fluidextract was tested by injection into dogs, and gave an immediate rise of blood-pressure represented by 44.8 mm. of mercury. The total assay for alkaloids by the process of Meller, gave a percentage of .163. This fluidextract of ergot was then divided into four portions as follows:

A. The first portion was put up in vacuum in tubes specially designed and made for this purpose.

B. The second portion was filled into bottles which were tightly corked, and allowed to remain for one year unopened.

C. The third portion was filled into bottles which were kept loosely corked for one year, this being obtained by boring a small hole in the cork.

D. The fourth portion was tightly corked but opened occasionally throughout the year.

These four samples were tested upon dogs at the end of twelve months, with the result that with A, no loss of blood-pressure raising power was sustained; this was also true of the percentage of total alkaloids. Of the other samples, the tightly corked sample (B) deteriorated the least (about 35 percent). A greater deterioration was noted in C, and D, (tightly corked, but opened occasionally, conditions under which the preparation is commonly kept) showed the most marked deterioration (67 percent.)

These investigations would indicate that with complete exhaustion and exclusion of the air from the container and its contents, practical permanency may be secured.

I hope my paper has proved of sufficient interest to excite your desire to investigate the subject of standardization more deeply, and I am sure if you do so, many astonishing things await you. Among other things you will discover one of the causes of therapeutic nihilism, and you may find out that drugs possess powers undreamed of that can only be revealed by drug standardization.

THE SNEAK THIEF IN PHARMACEUTICAL ETHICS.

The pharmacist who loudly urges Sunday closing and then sneaks back to his store and lets in customers is a sneak thief; so is the one who prates of ethical pharmacy and then substitutes in a most pernicious manner. However, one of the worst sneak thieves in pharmacy is the one who places a large sign over his store which reads "No Cut Rate Druggist," and who still continues to cut right and left. He is first kin to the prescription percentage druggist who has a sign which reads "No Percentage Drug Store." The pharmacist who treats disease violates the ethics of pharmacy as well as medicine and is hence a double offender. Those pharmacists who declare that dishonesty and blindness to professional ethics are necessary to success in business are mistaken and they are very much mistaken at that.—*Pacific Pharmacist*.

Papers Presented to Local Branches

PALATABLE MEDICATION FROM THE MANUFACTURER'S POINT OF VIEW.*

MERLE M. BURDICK, CHICAGO, ILLINOIS.

I am pleased indeed at this opportunity to express myself upon a subject which is of so great importance to the doctor, the pharmacist and the manufacturer. The subject, "Palatable Medication," is a very broad one and is of interest to all who may be engaged in the preparation of medicines.

The business success of the doctor, the pharmacist and the manufacturer depends, first, upon the dependability and accuracy of their medicines, and, second, upon the palatability of these medicines. Every patent-medicine manufacturer recognizes this fact and makes his remedies pleasant to taste above everything else, efficiency being to him a secondary (though not negligible) consideration. The fortunes made in patent medicines bear out monetary far-sightedness of this policy.

Many a child has allowed a dislike for the castor oil he knew he needed to keep him from telling his parents he was not well until this condition became serious. Many adults really feel just as these children do. Those of us who have stood behind the prescription desk know how often the remark is made, "I hate to take that stuff."

There are several methods by which medicines may be made more palatable, and I have classified these under the three following heads: (1) Disguising, (2) Enclosing, and (3) Purifying or Modifying.

Liquids are *disguised* in the form of emulsions, syrups, elixirs and mixtures; solids as troches, honeys, confections, effervescent powders and suspensions.

Liquids are *enclosed* in elastic capsules, and solids in cachets or wafers, hard capsules, tablets, pills and granules.

Drugs may be improved in palatability by *purifying or modifying*, through the removal and elimination of nauseous and unpleasant constituents; or by the complete separation of their active medicinal agents in a form or volume making possible their enclosure or administration in pleasant form.

Let me repeat: First, *our medicinal product should be absolutely accurate in dosage and dependable in quality*; second, presented in a permanent pharmaceutical form, and as attractively as possible; and third, capable of administration in a palatable shape. The whole aim of manufacturing pharmacy is to make drug products conform to these three rules. Evolution is along these lines, as a review of the work of the last few decades will show.

In glancing through our Pharmacopoeias, from the fifth to the eighth revis-

* Read at the December, 1912, meeting of the Chicago Branch.

ions, we find that the infusions, an imperfect and unpleasant form of medication, have been reduced in number of fifty nine in the fifth to three in the eighth edition. Syrups have increased from eighteen to thirty; emulsions from none to six; elixirs from none to three.

The effort all along the line has been *improvement, either in permanency or palatability, or in both.*

Our modern pharmacist is a capable and versatile man. He is called upon, in the course of a business day, to pass upon dosage and compound medicines of high potency when a slight error may mean a loss of life; he must be ready at a moment's notice to supply proper antidotes for poisons, give competent advice upon all the accessories needed by the sick, also regarding toilet and household preparations and other matters quite foreign to his profession, and must needs do all this in a manner that will retain the confidence of the physician and the good will of his customer.

With these many duties it is clearly impossible for him, however great his proficiency may be, to conduct the experiments necessary to originate any considerable number of new formulas or devise the methods of manufacture necessary for the preparation of elegant and palatable remedies in the quantities his business requires, and to do it with the scientific accuracy equal to that of the manufacturer, and make a profit in so doing. His facilities are insufficient and as a rule he wisely prefers to depend upon the manufacturer to furnish him these remedies, while employing his own energies in the commercial and strictly professional sides of his business. Of course he must be able to make emulsions, honeys, confections and troches for extemporaneous use. He can profitably make syrups and elixirs, of which he uses considerable amounts. He also has the capsule, a most valuable expedient for the administration of extemporaneous mixtures.

But in making many standard pharmaceutical preparations in common use, he cannot equal the pharmaceutical manufacturer in economy of production or in uniformity of product. The latter's automatic emulsifying machines permit of regulation of temperature and speed, resulting in qualities unattainable otherwise. His elastic capsule machine encloses the disagreeable oils and balsams. The troche machine cuts its thousands with greater accuracy and less labor than the druggist cuts a dozen. The automatic capsule-filling machine accurately fills many thousands each day. The tablet machine permits of the accurate subdivision of much used remedies and their presentation in such a convenient form that their advantages are apparent to physician and layman alike, such remedies being turned out at very small expense. All of these things, and many others, the manufacturer can make and furnish to the pharmacist at a cost so slightly above that of the material used that the pharmacist loses valuable time and money not to employ them.

The uses and methods of manufacture of troches, candies and elixirs, covering certain classes of medication, having been ably presented by Prof. Snow, Prof. Linton and Dr. Fantus, I invite you to consider the form used in the administration of potent drugs. This is a line of medication requiring the maximum of accuracy in dosage. These powerful drugs are used to meet serious conditions, and it is of vital importance that there shall be in their vended form neither the danger that comes from over-dosage or the inefficiency that attends insufficient

dosage. Our government through the Bureau of Chemistry, recognizes these dangers and is now testing the products of all manufacturers and demanding purity and uniformity. Such potent drugs must be permanent to meet these requirements and tests at any time.

In this field the manufacturer is rendering a great service to his retailing co-workers, especially in the preparation of such finished products as tablets, pills and granules in such a form that each and every dose is accurate, permanent and immediately usable.

The up-to-date manufacturer, that he may formulate and present this valuable class of preparations, has on his staff physicians who have had actual experience in treating the sick and in the administration of medicines; pharmacists with like experience in preparation and dispensing, and a corps of chemists, expert in research and analysis, as well as laboratories for physiological testing. These people have at their command an enormous amount of constantly growing tabulated information such as is required to produce this line of dependable medicines, and when it becomes necessary to produce a new product or to improve an old one they can do so at an expense that though large indeed in the aggregate, because of volume is trifling when reduced to the cost per dose.

His crude drugs and chemicals, whether made in his own house or purchased, are subjected to chemical or physiological tests, or both. He knows that his drug is right to start with. His formula is then carefully worked out, the nature of the drug being taken into consideration. Its solubility, disintegrability and the excipient best suited are all subjects of careful consideration. Then experiments are made to see if any of the processes required for its elaboration into the desired form are harmful to the drug, and if so, these are modified to meet conditions.

The formula being satisfactorily worked out, the drugs and excipients are weighed, checked for accuracy by another employe, then mechanically triturated for a sufficient period to completely mix them (sometimes 12 to 48 hours), then compressed into a tablet or rolled into a pill or granule, all the while being checked at each stage in its manufacture, and finally the resultant tested as to accuracy of dosage, disintegrability and solubility. The result is a nearly perfect pharmaceutical product, meeting the requirements of accuracy, permanency, dependability and palatability upon administration.

The granule made by the firm with which I am connected* is a product having the advantages of the pill and tablet without some of their faults. This form is especially useful in the exhibition of powerful alkaloids and other active principles in graduated dosage, for Dr. Fantus with his medicated candies cannot make strychnine sweet, or bad-smelling drugs pleasant. Here is where the granule has a special advantage—it can be crowded into such a small compass that taste and odor are matters of indifference. Even a baby can swallow one of these little pellets which can be “flipped” down the throat of a nursing infant, and being easily swallowed overcomes, for many people, the disadvantage of the pill and tablet. It is also readily soluble. It is certainly a portable, permanent and palatable form of medication.

*The Abbott Alkaloidal Company

The objection formerly raised against the pill and tablet, that they were insoluble, has been largely overcome by improvements in manufacture, the makers having eliminated (as in the case of the crude extract) everything except the part of actual medicinal value. For instance, we find in many drugs about 20% of extractive matter and this will contain medicinal elements running down to as low as 1-10 or 1% active principle. The non-medicinal portion of these extractives being largely gums, waxes, etc., is removed and is replaced to a certain extent by a completely soluble excipient, giving a product that breaks up readily and dissolves rapidly rendering the principle immediately available, thus reducing the volume of the product while increasing its efficiency. For illustration: Here is a sample of the extractive matter obtained from *uva ursi*, the source of arbutin, and here is arbutin as finished. It is a glucoside of value, but the drug itself and its crude extract have largely gone out of use because it contains so much tannin and valueless but unsightly and nauseating extractive matter that its physiological action is impaired and pharmaceutical elegance impossible.

We find in our experimental work that many tablets and pills fail in disintegrability and friability and are not soluble because the drugs from which they are made are not carefully prepared. They have not been handled properly in making; the extracts being especially unsatisfactory because of impurities left in them. Many are spoiled in drying and for this reason we use the active principles and other drugs of our special make.

In conclusion I would say that there are many reasons why the preparation and administration of medicine in pleasant form should be considered, alike, by the doctor, the pharmacist and the manufacturer and if their cooperation is consistent and sincere, they may give medicine the position it so justly deserves.

Christian Science, osteopathy and various other cults have been taken up by many people because of their lack of faith in and their dislike for medicine as it has been administered. The propaganda of various newspapers and magazines against patent medicines and quack medicines have caused many people to lose faith, and these things must be borne in mind by the doctor and the pharmacist who should prescribe and dispense only those things which can be depended upon to give results, not forgetting that they must also be pleasant to the consumer to win his favor.

I really believe that the pharmacist who would make it a point to let it be known among his patrons that he "specialized" in marketing remedies that are pleasant to take—or easy to take which is better—who advertised that fact and lived up to it, would find it exceedingly profitable. After all, people want to be cured, and cured *pleasantly*, and if they found that Dr. Pantus's candy lozenges or Dr. Abbott's sugar-coated granules "did the work" expected of them better than the bad tasting stuff, they would come to his store by preference, and not object to paying reasonable prices for the things that baby would take without a fight.

Our government is doing a great deal of fine work in the examination of medicinal preparations and because of it the doctor and pharmacist must eventually depend upon the manufacturer to furnish products which are permanent and accurate because of his superior facilities for chemical and physiological

testing and because of the increasing necessity for special machinery and men of scientific training in work of this kind.

I believe that it is the desire of every reputable manufacturer and I know it is of the Abbott Alkaloidal Company, to get into closer touch with the retail pharmacist. Accordingly I take great pleasure in inviting the members of the Chicago Branch of the A. Ph. A. to come and see how we extract alkaloids and other proximate drug principles, and how we make our own active principle granules—how we do our work.

PRINCIPLES AND OBJECTS OF PHARMACY LEGISLATION.*

H. C. CHRISTENSEN, MEMBER ILLINOIS BOARD OF PHARMACY.

In general discussions of the question of legislation, the popular idea prevails that all one has to do to bring about desired results, is to draft a bill, get some friendly member of the legislature to introduce it and then sit down and wait for it to be enacted into a law and receive the approval of the Governor of the State. But if one pursues this course, in ninety-nine times out of one hundred the desired result will not be accomplished.

There are many constitutional and legal requirements and rules of the General Assembly that must be complied with in the preparation and introduction of a bill, and its passage through the various stages of legislation. Many meritorious measures fail of passage for the reason that at the last moment some fatal error is found in the title or the body of the bill, which it is then too late to correct. Others pass both branches of the General Assembly, are approved by the Governor and are then declared unconstitutional by the Supreme Court for the reason that the constitutional requirements have not been complied with.

But it must not be presumed, from what I have said, that every bill which is introduced in the General Assembly reaches the order of passage. A very small percentage of the measures introduced ever reach this order. The rules of the General Assembly provide that every bill must be referred to a proper committee. Scores upon scores of bills have no particular merit in them and are not taken up for committee consideration until the closing hours of the General Assembly, when they are reported back to their respective houses without recommendation. Others receive careful committee consideration and are reported back either for or against passage. If the recommendation be favorable, then there are many other stages through which the bills must pass before a vote can finally be taken upon them. Many bills that have been acted upon favorably in committee do not get beyond that state, for the reason that in the great multiplicity of measures upon every conceivable subject there is not sufficient public interest or sentiment to push them along. I mean no reflection upon the members of the General Assembly when I say that many good bills are not enacted into laws. The members can hardly be expected to study care-

*Read before the Chicago Branch, A. Ph. A., Jan. 16, 1913.

fully every measure that finds its way into the legislative hopper. If there was a limitation upon the number of bills that could be introduced at a session, then it might be possible to give all of them careful consideration. But without such limitation many are bound to be neglected.

General, wide-spread interest and public sentiment are the greatest aids in securing good laws. But even with this assistance it takes a long time to bring about needed legislation. It took years and years to get upon the statute books of Illinois a General Primary law that would stand the test of the Supreme Court. The present Civil Service law was enacted only after many years of unceasing effort upon the part of its advocates. It was largely through the influence of the Illinois Pharmaceutical Association and the interest aroused by it that the first Pharmacy Law of the State was passed. Many other instances might be cited.

The first Illinois pharmacy law was enacted in 1881. It has been amended from time to time to meet changed conditions until we now have one of the best—if not the best—pharmacy law in the Union. You are familiar with it and I will not go into details concerning its provisions. But, good as it is, it should be still further amended in many particulars.

The Board of Pharmacy, of which I have the honor to be a member, has considered this matter carefully, and I do not think I can better present the question to you than to quote from a report made by the Board to the Governor of this State last month, which is as follows:

"In order to elevate the standard of requirements of applicants for examination, to enable the board to more effectively administer the cocaine, eucaïne, adulteration and substitution provisions of the law, to provide facilities for conducting examinations, in compounding prescriptions and to keep pace with ever-changing conditions, we have the honor to make the following recommendations:

'The law should provide that every applicant for examination as registered pharmacist must be a graduate from a school or college of pharmacy that is recognized by the Board.'

"Any law which should be enacted along this line should protect the young men who have become registered as apprentices and assistant pharmacists and are now preparing themselves for examination as registered pharmacist under the present law, which does not require graduation from a school or college of pharmacy.

"At its last annual meeting the Illinois Pharmaceutical Association went on record as favoring the above graduation requirement and instructed its legislative committee to have a bill for such a law introduced at the coming session of the General Assembly. This action was taken following a referendum vote by the registered pharmacists of Illinois, the result of which was in the ratio approximately four to one in favor of such a legal requirement.

'The law in regard to the sale of cocaine and eucaïne and their compounds and derivatives cannot be made too drastic. The present minimum penalty for their illegal sale should be made larger.'

"Fines of from \$25.00 to \$200.00 which have been imposed upon notorious sellers of these drugs will not stamp out the traffic in them.

'A penalty should be provided for a person not a registered pharmacist, licensed physician, licensed dentist or licensed veterinarian having in his possession at any time more of these drugs than can be obtained by means of a prescription.'

"There is no law against unauthorized persons having in their possession cocaine and eucaïne undoubtedly held for sale. Neither is there any provision in

the United States statutes which in any way regulate the interstate traffic in these drugs.

"Investigation shows that during the year 1911 a wholesale druggist in Chicago sold to a retail druggist just across the line in Indiana 150 ounces of cocaine, a large portion of which found its way back into this state to supply the needs of illicit sellers. In a raid upon the home of one of the largest illicit dealers of cocaine in Chicago there were found over thirty ounces.

'A penalty should be provided for a registered pharmacist, licensed physician, licensed dentist or licensed veterinarian having in his possession at any time more than an extremely limited amount of these drugs. It should also provide the maximum amount that may be sold or prescribed by authorized persons in a given time.'

"In an arrest in Chicago a physician admitted the sale of over 30 ounces of cocaine in one month. The requirements for ordinary prescription purposes seldom run in excess of one ounce in six months. When arrested this same physician was in the act of giving two ounces of cocaine to a supposedly woman patient. He claimed he was 'treating the woman for the habit by diminishing the dose.'

'A limitation should be placed upon the amount of these drugs that may be sold by wholesalers to a single purchaser within a given time.'

"The records of cocaine sales which the law requires wholesale druggists to keep show excessive sales of cocaine to retailers in the city of Chicago against whom no direct evidence of improper sales could be obtained, but the amount found in stock was largely in excess of the ordinary prescription requirements.

'An appropriation of not less than \$7,500 annually should be made for investigating the illegal sale of cocaine and ecaine and other habit-forming drugs.'

The above amount is none too much for this purpose and could wisely and economically be expended. Cocaine is regarded by the medical profession as the most harmful of all the habit-producing drugs. It destroys the body, mind and soul and makes degenerates, thieves and paupers of its victims. The profits in it are immense—in some cases 500%—and unless its sale is curbed by stringent regulations there will always be found unscrupulous persons who are willing to 'take a chance.'

'An appropriation should be made for a laboratory where Pharmacopoeial and National Formulary preparations may be analyzed.'

"The present law authorizes our Board to make such analyses, but it has no equipment for this purpose and no funds. The Board should be provided with ample means so that it may protect innocent buyers from unscrupulous dealers. We have every reason to believe that countless preparations are adulterated in order that the purchaser may receive a larger amount for his money than can be procured from a near-by competitor.

"Numerous instances might be cited, but we will cite but two very common preparations, namely, tincture of iodine and solution of magnesium citrate. The former is used externally and the latter internally. Recent investigation as to the purity of these two preparations that are being sold in drug stores in Chicago shows an immense amount of adulteration. When of standard strength and purity tincture of iodine is of great value, but when adulterated its effect may be nil. When properly prepared, solution of magnesium citrate is a valuable laxative, but when adulterated and made of common washing soda, as was found to be true in some instances, its effect is deleterious to the health of those who use it.

'An appropriation of \$1,500 should be made for two new prescription cases, one in our office in Chicago and one in the Springfield office.'

"The prescription counters now in use by the Board are crude affairs and are not a credit to the State of Illinois. As an example to applicants for examination

and who in time will be the proprietors of stores, our examination equipment should be the very best. Prescription counters should be equipped with good plumbing and electric lighting, and so constructed that applicants can perform all the work necessary in compounding prescriptions without being molested in any way in this important branch of our examinations.

'An appropriation of \$4,000 per annum should be made for expenses of the members of the Board and its officers.'

"This amount would enable us to have an agent in the field at all times to see that the provisions of the Pharmacy Law are complied with."

In our report to the Governor, which I have just read, we did not go into minute details as to the reasons for our prerequisite recommendations, and I am going to take this opportunity to state our views more fully, and also to discuss what I regard as other needed amendments to the present law.

Prerequisite Legislation: Perhaps no legislation affecting pharmacy is entitled to more consideration than the proposed law requiring graduation from a recognized college or school of pharmacy as a prerequisite for examination as a registered pharmacist. This proposed law has caused a great deal of discussion among pharmacists and others, and in some instances has been bitterly criticised.

Some of this criticism comes from those who are, I fear, not wholly free from partisanship and personal interest. It seems to me that this subject may be fittingly considered under three sub-divisions, namely:

First, its relation to the public at large.

Second, its relation to the proprietors of drug stores and registered pharmacist clerks.

Third, its relation to unregistered clerks, or those who may eventually become registered.

How will this proposed law, if enacted, affect the public? And let me say right here that no matter how this law might affect pharmacists, boards of pharmacy, clerks, proprietors or others, the great rank and file of the people who elect representatives to enact their laws must receive first consideration. Laws are enacted primarily, or should be to protect the interests of the people as a whole, and not the few who may be interested in the enforcement of them, or those whose business or employment may be affected by them. This is especially true of the laws relating in any way to the public health. How, then, would this law affect the public? Need I argue that it will result in superior service? That such a law would redound to the benefit of the public, I think none will deny. Most men, the great majority of men, in fact, will give the best that is in them when they see and recognize that which is best. But how, I ask you, is a druggist going to give his customers Tincture of Iodine up to the standard, Syrup of Iron Iodide free from Iodine, Solution of Hydrogen Dioxide containing the required 3 percent of absolute Hydrogen Dioxide, and Ammonia Water containing the required 10 percent of NH_3 , if he has not the skill or inclination to determine the strength, purity and quality of his preparations? I do not want to be understood as arguing that a college graduate is always the superior of the non-graduate, but I do maintain that out of a given number of college-

trained pharmacists the public will receive better service than out of a like number of non-graduates.

Opponents of graduation as a prerequisite may argue that 90 percent of the drug business is purely commercial and 10 percent professional, and that, therefore, college training is 90 percent unnecessary. But I reply that in times of sickness and distress, when the life of loved ones may be hanging in the balance, the 10 percent professional outweighs the 90 percent commercial.

Now, how would this proposed law affect proprietors and those who are already registered? Some proprietors are opposed to this law. Their principal objection is that clerks are now hard to get and that if a prerequisite law is enacted they will be still harder to find. As you know, it is intended to apply only to registered pharmacists. The result would be an increase in the number of assistant pharmacists, and, in my opinion, an improvement in the class of those who would be registered as registered pharmacists under the provisions of the act.

Proprietors are not suffering from a scarcity of registered pharmacist clerks, but rather from the competition of a certain class of registered men, who are not college graduates, and from unregistered men who have entered into business on their own account and are employing registered help.

Some of these men have embarked in business without sufficient training or capital to enable them to be successful along legitimate lines.

It is probably true that the enactment of a prerequisite law may, to a limited extent, increase the wages of good registered pharmacist clerks. But if the wages paid are commensurate with the duties of a good registered pharmacist clerk, this particular class will not embark in business on their own account until such time as they have received the necessary training and acquired the necessary capital to justify them in entering upon business careers, as proprietors, on a basis that would not be detrimental to those already in business. In other words, they would be honorable competitors.

Furthermore, the fact that at present a clerk can become registered without even attending college induces many young men to plunge into proprietorship of drug stores in the hope and expectation that by employing a registered man for a time they can prepare for examination, and at the same time conduct a business and make a living. To my mind this class of proprietors is the most dangerous competitor. Without the experience or training necessary to succeed, they are soon compelled to dismiss their registered help, evade the law as best they can and make a living by whatever means appeals most readily to them. This is the kind of competition honest, well-meaning and capable proprietors of drug stores are compelled to meet. Graduation as a prerequisite for registration would eliminate this latter class of competition, because few would have the temerity to engage in business on their own account with a two-year college course ahead of them, and which would necessitate their absence from the business a great portion of the time.

When we come to the question of the clerks who still have an examination to pass, we hear a great deal about the hardships it will impose upon young men who have not sufficient means to justify them in entering a school or college of pharmacy, and who therefore will be compelled to "work their way through

school." A thing is a hardship only when the result obtained does not justify the effort. If a young man succeeds in working his way through college and gets his diploma, it is not regarded by him as a hardship. Rather is he proud of what he has been able to accomplish by his own individual efforts.

In this city hundreds of young men work their way through medical, dental, law, literary and engineering schools under a heavy expenditure of time and money, much more than is required in a school of pharmacy, and yet we never hear of them complaining or wanting to dispense with the college course for these professions. With the "every-other-day" plan of instruction in vogue in the colleges of pharmacy scores of young men "work their way through" every year with much less effort and sacrifice than do the students in other professions.

It is argued that examinations by the Board of Pharmacy should determine a man's fitness for registration. As a member of the Board of Pharmacy for a number of years, assisting in the examination of hundreds of candidates, I assert that it is a hard undertaking to devise or give an examination that will always admit the fit and reject the unfit. A bright candidate, properly coached, can pass an examination of extreme difficulty, while the same candidate, if he had to put what he tells into actual practice, would in many cases fail. It is a positive fact, as has been demonstrated in examination time and again, that a candidate may give a detailed description of the method for the assay of Opium, for instance, and yet that same man would have great difficulty in assaying a sample of Opium if he were put into a laboratory for that purpose.

There are certain things, a certain training, obtained only by a systematic course in pharmacy, that no examination can measure, and yet, which the candidate must have in order to succeed in the true sense of the word.

College training in pharmacy is being required in the more advanced states. Where it has been tried there is no disposition to go back to the old order of things. It is in harmony with the progress of the times and follows naturally similar requirements in medicine, dentistry and other learned professions. Is there any reason why Illinois, which leads in so many good things, should lag in this important educational movement?

As to the other recommendations in our report to the Governor, I think the reasons given therefor are sufficient to enable you to get a clear understanding of what the Board of Pharmacy regards as being necessary, and to properly bring these matters before you for discussion. I will not therefore dwell upon them at any further length.

A Pure Drugs Act: If you followed the above report of the Board to the Governor closely you observed that with the exception of a request for an appropriation sufficiently large to enable the Board to properly equip a laboratory for analyses, no recommendation is made for further amending the law to prevent the manufacture or sale of adulterated or misbranded drugs. In other words, no recommendation is made for what is known as a "pure drugs" act, of which the Federal act upon this subject should be the basis. Personally, I am firmly of the opinion that such a law should be enacted.

Section 14 of the present law covers the manufacture and sale of medicines and preparations recognized in the United States Pharmacopœia and National Formulary as official. No deviation from this standard is permitted. The

law as applied to this class of preparations is in accordance with the so-called "single" standard. This, I believe, is as it should be.

But the section referred to is silent upon the subject of labeling preparations intended to be used for the cure, mitigation or prevention of disease, and generally known as patents and proprietaries, in order that they may show whether or not they fall below the professed standard of strength or purity under which they are sold.

Neither is there anything in the section referred to upon the subject of the package or container bearing a statement upon the label of the quantity or proportion of Morphine, Opium, Heroin, Chloroform, Acetanilide, etc. I realize that there are many well-meaning druggists in the State who are opposed to any further statutory regulation in these respects. The United States Government requires certain labels upon all medicines and preparations which enter into Interstate traffic. A number of States require them on domestic preparations. Outside of the pharmaceutical profession there is a strong sentiment and general demand for a more stringent law in regard to these matters, and I am satisfied that within the very near future such a law will be passed by the General Assembly. If the druggists of the State oppose it, then its administration will be committed to the State Food Commission.

In not a few states, pure drug laws were enacted under an aroused public sentiment, which were distinctly detrimental both in their nature, and manner of enforcement to the druggists of these States, and without being of any special advantage to the public. Had the druggists of those states taken an active interest in the matter no doubt these laws would have conserved every interest on the subject, and at the same time proved less distressing to the pharmacists. In order that this state may not have a similar experience, it is high time the druggists took upon themselves the task of doing two things,

First, securing an appropriation to enable the Board of Pharmacy to properly enforce the existing law pertaining to pharmacy, and

Second, securing the enactment of a law or an amendment to the present law along the lines of the Federal act that will conserve the public welfare and not work an undue hardship upon the pharmacists.

It is for the pharmacists of Illinois to say whether they will champion a pure drugs act which will be enforced by the State Board of Pharmacy, or whether they will sit idly by and permit such legislation to be fostered and enforced by those who may not have the best interests of the pharmacists at heart.

Sanitary Inspection of Drug Stores: Another needed amendment to the pharmacy law is one establishing authority to inspect and regulate the sanitary conditions of drug stores. That there are *some* stores that might be improved by such a regulation, I think you will admit. Not *your* stores, of course, but *some* stores. Over on the West Side a druggist has opened what he calls a "Sanitary Drug Store." Why a Sanitary Drug Store? Evidently this druggist believed that a Sanitary Drug Store would make a "hit," the same as Sanitary Barber Shops, Antiseptic Laundries, and Sterilized Turkish Baths. Are there other drug stores in the city that are not sanitary? It seems to me that the very naming of this Drug Store has a rather pertinent significance. We have, especially in the larger cities of the state, laws, regulations, or ordinances

providing for the inspection of grocery stores, meat markets, restaurants, dairy depots, etc., in order that the public health may be protected.

Does it not appeal to you that any business as closely related to the public health as a drug store should also be subjected to sanitary regulation?

There is also another reason, and to my mind a more potent reason why drug stores should be so inspected. The law of this state provides that drug clerks must have had three or four years' experience in retail drug stores compounding prescriptions under direction of a registered pharmacist prior to registration, thereby establishing and recognizing the necessity of actual experience as a training for the profession. In what kind of an environment do these clerks get their training? If you had stood, as I have stood for the past six years and watched clerks compounding prescriptions, and if you had seen the carelessness, slovenliness of the work of some of them, had seen the condition in which they turned out the finished product, the filthiness in which they left mortars, graduates, balances, spatulas, and counter, you would wonder where some of these men were trained, or rather you would wonder about their preceptors. And mind you these same men came with affidavits of from three to ten years' experience from druggists of this state who would resent most emphatically any imputation that their stores were not the acme of cleanliness and their methods of dispensing beyond reproach. Furthermore, unsanitary surroundings tend to make clerks, especially in the impressionable stage of their apprenticeship, careless in their weighing, measuring and other essentials of successful dispensing. It cannot be expected clerks trained in slipshod drug stores will become neat and careful pharmacists.

In view of the fact that the state recognizes and accepts drug store experience as an essential qualification for registration, should not the state supervise the conditions under which this training is received?

Inspection of Weights and Measures: Another amendment to the pharmacy law should establish inspection of weights and measures used in the drug stores of this state. The state law permits cities to pass ordinances establishing a city sealer's office for the inspection of the weights on which you buy your sugar, meat, grain or coal and the measures by which you purchase your milk, malt or coal oil. In most large cities, ordinances to this effect have been passed, and are being enforced, but no provision is made for the inspection of the weights and measures used in compounding medicines upon which human life may depend. This is clearly a serious omission. The passage of such a law would necessarily provide for *standard* weights and measures that would be accessible to the druggist. As it is now, the only guaranty that the druggist has as to the accuracy of his weights and measures lies in the integrity of the person who supplied the same to him. Too frequently, the pharmacist sacrifices accuracy to price with results more serious than he may ever know.

The Federal Government, recognizing the importance of accuracy in weights and measures, has established a "Bureau of Standards" in which all the weights and measures used in government work may be, and many *must* be, standardized. In the sugar work of the customs service, for instance, no apparatus may be used unless it bears the seal of the Bureau of Standards, and the weights they furnish are gold plated in order that there may be no change after some leave

the bureau. If you think weights and measures generally supplied are accurate, go into any dealer in chemical apparatus and price the ordinary burettes and graduates and those that are standardized and guaranteed correct. You will be astonished at the difference in price.

The state makes provision for punishing a pharmacist if his preparations are not up to the standard and yet makes no provision for aiding him in establishing the reliability of his weights and measures on which the accuracy of his preparations *absolutely* depend.

In favor of this amendment to the law, it may be said it would be a preventive rather than a punitive measure, a help to the druggist not a handicap, a measure in harmony with the spirit of all legislation, which aims to prevent rather than punish infractions of the law. Ninety percent of the druggists of the state would avail themselves of an opportunity to establish the accuracy of their weights and measures if there was a set of standards in their city or county. The other ten percent should be compelled to.

In the suggested amendments of the law for the inspection of the sanitary conditions of stores as well as for the inspection of weights and measures, I lay great stress upon the importance of having these measures enforced by the Board of Pharmacy, rather than by some other branch of the state government that might be either indifferent or hostile to the welfare of the pharmacist. You cannot impute any selfish motive to a member of the Board of Pharmacy for recommending that these measures be enforced by the Board, because membership on the Board of Pharmacy may change, but it is highly important to the pharmacists themselves that laws be both drafted and enforced by those who fully understand the conditions under which the pharmacist must work.

The Board of Pharmacy, elected you might say, by the pharmacists of the state, acting through the state association, conversant with the needs, desires, limitations, etc., of the pharmacists, is in a better position to enforce fairly and justly, the laws pertaining to pharmacy than any foreign executive body of the state government.

Revocation of Certificates: Authority should also be given to the Board to revoke the license and close the stores of persistent violators of the Pharmacy Law. The law requires that applicants for examination as registered pharmacist and assistant pharmacist shall be of good moral character and temperate habits, and also confers upon the Board the power to revoke the certificates of registered pharmacists and assistant pharmacists, who have become addicted to the excessive use of stimulants and narcotic drugs and whose moral character has deteriorated. No doubt there are many persons holding certificates at this time which should be revoked on these accounts. But the Board of Pharmacy has no means of telling who they are, and cannot act in the premises unless they are advised by proprietors and others. The Board realizes that it would be very embarrassing at times for proprietors to report information about clerks which would result in their certificates being cancelled, but it seems, for the general welfare of the profession, that this should be done.

Paris Green Section: That part of the law which permits the sale of "Paris Green and Lead Arsenate for insecticide purposes only" by other than registered pharmacists, should be changed. It should provide for their sale, and also for

the sale of other poisonous substances or mixtures of poisonous substances in unbroken packages, for use in the arts or as insecticides, upon condition that they bear a label with the names of such poisonous substances and the word "Poison" printed thereon in prominent type, and the names of at least two readily obtainable antidotes with directions for their administration.

In concluding, I want to refer very briefly to the work of the Board of Pharmacy during the last eight years, most of which time I have been a member of it. In that time the Board has examined 3926 applicants for registered pharmacists and 2503 candidates for assistant pharmacists, to say nothing of the hundreds upon hundreds of apprentice applicants, whose examinations have been about the same as is required for eighth grade pupils in the public schools. Some applicants for registered pharmacist and assistant pharmacist, in fact, a great many of them, have taken two, three and even four examinations, and therefore the numbers above mentioned do not necessarily mean that many different *individuals*. Of the above numbers, 1592 applicants for registered pharmacist and 1366 applicants for assistant pharmacist passed successful examinations and were granted certificates. Every applicant has been examined in four branches in written work and until the year 1912 has been required to compound four prescriptions. During the past year applicants have compounded but three prescriptions or preparations each. This means that approximately 25,716 written examination papers have been carefully gone over and rated by the Board and that 24,709 prescriptions have been compounded under its close supervision.

From the organization of the Board in 1881 until July 1, 1911, it was self-sustaining. During all that time the General Assembly did not appropriate a single penny for its maintenance. Since July 1, 1911, we have been paying all moneys received into the State Treasury. Up to October 1 of this year we have paid \$28,826.50 into the State Treasury and had spent \$19,938.76 of the \$31,560.00 appropriated to maintain the office until July 1, 1913. By July 1, 1913, we will have paid into the State Treasury approximately \$45,000.00. You will observe that the Board is paying more money into the State Treasury than it receives by way of appropriations. The Board feels that the General Assembly should at least appropriate as much as the state receives.

A QUESTIONABLE PRESCRIPTION.

JOHN A. HANDY, PH. C., B. S.

The following prescription was recently brought to my attention by one of the members of the State Board of Pharmacy, who informed me that it was one which had been sent to his store by a local physician:

"Phenol (carbolic acid) C_6H_5OH	2 grains
Arsenic Trioxide (arsenous acid) As_2O_3	1 grain
Silver Oxide Ag_2O	6 grains
Mercurous Iodide (proto-iodide) HgI	12 grains
Extract of Hyoscyamus.....	6 grains
Extract of Liquorice (powdered).....	100 grains
Mix and make into 48 pills.	
Sig.—Take one pill before meals."	

*Read before the Northwestern Branch.

Physiologists inform us that very little absorption takes place in the stomach, except such as the soluble mineral salts, and such organic liquids as chloroform, alcohol, etc. Water taken into the stomach is almost immediately thrown into the intestinal tract. In those cases where the medical substances are not rendered inactive by the acid contents of the stomach, solution here will hasten the absorption of the drug in the intestinal tract.

It is in such cases that the dispensing pharmacist must exercise scientific judgment. He should know that the stomach contents are usually acid from the small amount, about 0.2%, of free hydrochloric acid present in the gastric juice; and he should endeavor to prevent those things from going into solution in the acid stomach contents, which would be rendered inactive and inert by so doing. The safest rule to follow is to dispense pills so that they may pass through the stomach and be dissolved by the alkaline intestinal juices. This will necessitate a careful study of the ingredients of the prescription, and the selection of an excipient that will give a finished product meeting the general requirements of stability, solubility, etc.

To attempt to even guess at the purpose and motive, which might have inspired the above prescription in the mind of the physician who wrote it is not within the scope and purpose of this paper.

The formula as it stands presents a serious chemical incompatibility if not properly compounded, and even then, one of the ingredients at least will be inactive and inert.

If the above ingredients are mixed in the order in which they are given, we would have a mixture of phenol, arsenic trioxide, and silver oxide, which upon trituration would immediately burst into flame. This is caused by the energy liberated in the disruption of the molecules of silver oxide—giving up their oxygen and leaving the silver as a hard metallic scale, and occurs only when the silver oxide is mixed with the arsenic trioxide and then brought in contact with the phenol. This is perhaps due to the fact that the arsenic trioxide is a weak reducing agent, and helps to tip over the somewhat unstable molecule of silver oxide in the presence of other reducing agents, as phenol, which in itself could not do so in the small proportion used in this formula. No free iodine or free mercury were found at any time in any of the combinations of ingredients used.

In order to prevent the silver oxide from being reduced so rapidly as to cause combustion, compound as follows:

Rub the phenol and the arsenic trioxide together first (the gritty As_2O_3 assisting in the powdering of the phenol) then add a little of the powdered extract of glycyrrhiza (20 to 30 grains) and then incorporate the extract of hyoscyamus (if the latter is added directly to the phenol-arsenic mixture, the whole mixture rubs up into a sticky mass, due perhaps to the moisture in the extract of hyoscyamus which makes it difficult to incorporate the remaining ingredients), next incorporate the protoiodide; then the silver oxide and finally the remaining extract of liquorice.

It is useless to try to keep the silver oxide from reducing, because according to the famous pharmacologist Jacobi, "this metal is absorbed in extremely small amount and is reduced to the inactive metallic state as soon as it enters the

body; it is absolutely proved that the silver cannot be absorbed in amounts sufficient to have any action whatsoever."

A series of experiments were made with the above pills compounded with different excipients, including water, glycerin, glycerite of starch, syrup and glucose, to find out which were most easily disintegrated in water, in artificial gastric juice and artificial pancreatic juice. The pills were suspended from platinum loops in bottles filled with these fluids and kept at body temperature for several hours.

It was found that the pills containing water as the excipient disintegrated and dissolved the most completely; glycerin came next in efficiency. In all cases there was a considerable residue which did not go into solution, showing that some of the material was insoluble and consequently, practically inert medicinally. In nearly every case the pills were not greatly affected by the artificial gastric juice, but were considerably disintegrated in the alkaline pancreatic juice.

BUSINESS LIFE BOATS.

How about your life boats? By this we mean your resources, upon which you can fall back in times of trouble. There are two of these which should be constantly looked after as to sea-worthiness as they are the first into which you will scramble in time of impending financial shipwreck.

They are, first, your credit.

And second, your moral standing.

Now the peculiar thing about these two "boats" is that one cannot be lowered without the other. To establish and maintain a good line of credit your reputation as a moral man has got to be A No. One. Ideas on this matter differ, but it has been proven time and time again that the man who leads an immoral life in the long run loses his business. He may think that he is pulling the wool over the public's eyes, but the very things that he wants to keep under cover and which he undoubtedly thinks are secret are just the ones to leak out, and then it is only a question of time before every one is "on to him."

Not only make your business clean, but make yourself clean, and see that the same thing is true of your clerks. Let people know that your store is a safe store. As to credit, you all know the importance of this. It is of untold value to you and you should make every effort to keep it always spotless.

There are many kinds of icebergs that obstruct the business highways, and a watch has to be constantly kept to steer clear of them. It is a fact and a sorry one too, that it always takes some big disaster to awaken people to the realization of the importance of changing things so as to assure safety in the future to others. So if your competitor is hit by a financial "berg" and goes under, look to it that you steer clear of the same trouble that sank him. We can always learn from the other fellow's blunders as well as our own, and even if things are seemingly calm around you now, and you are sailing along smoothly, just keep a sharp lookout, your credit the best, and your character as near the high water mark as possible.—*The Apothecary*.

Of General Interest

PROCEEDINGS RELATING TO THE ORGANIZATION OF THE NATIONAL DRUG TRADE CONFERENCE.

(First Session.)

The delegates to the Legislative Conference provided for in certain resolutions adopted at the Denver meeting of the American Pharmaceutical Association, met in Parlor 128 of the New Willard Hotel, Washington, D. C., Jan. 15, 1913 at about 10 A. M.

J. H. Beal announced that Mr. John C. Wallace of New Castle, Pa., had been designated by President Day of the American Pharmaceutical Association to preside as Temporary Chairman.

Mr. Wallace called the conference together at 10:45 A. M., and stated that the first business in order would be the reading of the call for the conference.

J. H. Beal as Temporary Secretary then read the resolutions as follows:

"Moved by J. H. Beal seconded by John C. Wallace:

"(1) That the American Pharmaceutical Association hereby calls a conference to be made up of delegates from the various national pharmaceutical associations to consider the subject of legislation, both state and national, in its relation to pharmacy.

"(2) That the General Secretary is instructed to send invitations to each of the national pharmaceutical associations requesting the appointment of delegates to such conference.

"(3) That such conference shall be held at Washington, D. C., some time prior to January 1, 1913.

"(4) That the Temporary Chairman of the conference shall be appointed by the President of the American Pharmaceutical Association, and the General Secretary of the association shall act as Temporary Secretary of the same.

"(5) That such conference shall elect its own permanent officers, and after its organization shall be considered as representing all of the associations sending delegates to the same, and shall not be considered as being conducted under the auspices of any particular organization." (*Journ. A. Ph. A., Oct., 1912, p. 1106.*)

The Temporary Secretary stated in explanation that the date Jan. 1, named in the resolutions had been later changed by action of the Council to Feb. 1.

The Temporary Secretary also read the list of delegates to the Conference for whom he had received credentials. There were as follows:

Representing the American Pharmaceutical Association:

John C. Wallace, New Castle, Pa.

S. L. Hilton, Washington, D. C.

J. H. Beal, Scio, Ohio.

Representing the National Wholesale Druggists' Association:

F. E. Holliday, New York City.
C. Mahlon Kline, Philadelphia, Pa.
E. D. Taylor, Richmond, Va.

Representing the National Association of Manufacturers of Medicinal Products:

Adolph Rosengarten, Philadelphia, Pa.
A. R. L. Dohme, Baltimore, Md.
Charles M. Woodruff, Detroit, Mich.

Representing the American Association of Pharmaceutical Chemists:

Willard P. Stearns, Chicago, Ill.
W. C. Abbott, Chicago, Ill.
R. C. Stofer, New York City.

Representing the National Association of Retail Druggists:

W. C. Anderson, Brooklyn, N. Y.
F. H. Freericks, Cincinnati, Ohio.
J. F. Finneran, Boston, Mass.

A call of the roll showed that all of the above delegates were present. The Temporary Secretary also read a letter from the National Wholesale Druggists Association, requesting that Mr. Chas. A. West be permitted to act as a delegate in place of F. E. Holliday at the afternoon and subsequent sessions, as Mr. Holliday would be compelled to leave the city at 2 P. M.

It was moved by F. H. Freericks, and seconded by F. E. Holliday that the Temporary Officers continue to act until a permanent organization had been effected, and their successors elected. The motion was carried.

It was moved by J. F. Finneran, seconded by W. C. Anderson, that delegates present from any organization related to pharmacy and interested in pharmaceutical legislation be admitted as members of the Conference.

It was moved by W. C. Abbott, seconded by W. P. Stearns, that the motion be amended so as to admit to the Conference members of the accredited legal committees of the American Medical Association, American Dental Association, and American Veterinary Association.

After some considerable discussion, J. H. Beal offered the following substitute for the motion and amendment, which was seconded by W. C. Anderson:

"(1) That the Chairman appoint a committee of five on Form of Organization and Nominations, and a committee of five on Resolutions, both of the said committees to report at a subsequent session of the Conference.

"(2) That until the aforesaid committees shall be ready to report, the Conference proceed to the consideration of pending national opium legislation.

"(3) That the privileges of the floor be extended to the delegates present from other medical and pharmaceutical associations or associations interested in pharmaceutical legislation."

The substitute resolutions were unanimously adopted.

It was moved by Adolph Rosengarten, seconded by F. H. Freericks, that the Conference adjourn for 30 minutes to enable the respective delegations to consult and to select spokesmen to represent their respective interests. The motion was carried.

The Conference was again called to order at 12:15 by Chairman Wallace.

F. E. Holliday announced that Dr. Hamilton Wright had extended an invitation to the Conference to meet with him at the State Department some time during the present day. It was moved by F. H. Fredericks, seconded by W. C. An-

derson, that an invitation be extended to Dr. Wright to meet with the Conference at its present meeting place at 3 P. M. this day. The motion was carried.

On motion of F. H. Freericks, seconded by J. F. Finneran, the several organizations represented by delegates in the Conference were requested to express their views respecting the so-called Harrison-Wright Bill, H. R. 25834, designed to regulate the importation, manufacture and sale of certain habit forming drugs.

Mr. C. M. Woodruff spoke for the National Association of Manufacturers of Medicinal Products, criticising the bill as being incapable of application on account of the complexity of the methods proposed for stamping the derivatives and preparations of the original crude drugs, and the multiplicity of the records and reports which it proposed to require. He also presented and explained a substitute bill which he recommended for approval by the Conference.

W. C. Abbott spoke on behalf of the American Association of Pharmaceutical Chemists. He also opposed the bill on account of the impossibility of complying with the proposed requirements regarding the stamping and keeping a record of the derivatives and preparations of opium, and expressed his approval of the substitute measure proposed by Mr. Woodruff.

C. Mahlon Kline spoke on behalf of the National Wholesale Druggists Association, and said that while he regarded the bill as being exceedingly faulty, the members of his association would nevertheless make an earnest effort to comply with its provisions if it should become a law, although he was not yet able to see how some of the proposed requirements could be carried out. Mr. F. E. Holliday also spoke for the same association.

Mr. F. H. Freericks spoke in behalf of the National Association of Retail Druggists and pointed out the numerous inconsistencies of the bill, especially in the provisions relating to stamping and the keeping of records.

S. L. Hilton and J. H. Beal each spoke on behalf of the American Pharmaceutical Association. They expressed their approval of the bill in so far as it related to the general principles to be followed in regulating the sale of opium and cocoa leaves, their derivatives and preparations, but expressed the opinion that the machinery for carrying the provisions into effect, especially as regarded the stamping of derivatives and preparations and the keeping of records, was entirely too complicated. It was their opinion that if these provisions were enacted into law, they would impose heavy and quite unnecessary burdens upon the retail drug trade.

At this point, the Temporary Secretary stated that several representatives of the Proprietary Association of America were present in the room. It was moved by F. H. Freericks, seconded by J. H. Beal that the representatives of that association be admitted to the privileges of the floor, and a vote being taken it was so ordered.

The Chairman then invited H. B. Thompson, Esq., of Toledo, to speak for that organization. Mr. Thompson stated that the presence of himself and Mr. Frank J. Cheny was accidental; that being in the hotel they had learned of the Conference and had been invited by a member to be present. Their visit was to be understood as one of courtesy merely. The members of the Proprietary Association were entirely satisfied with the provisions of the proposed legislation

regarding narcotic drugs, as it would not in any way affect the interests of the Proprietary Association. On behalf of that association, he thanked the Conference for its grant of the privilege of the floor.

It was moved by W. C. Anderson, seconded by F. H. Freericks, that the substitute bill offered by C. M. Woodruff be referred to a special committee of five for consideration and report. Carried. The Chairman appointed the following Committee:

C. M. Woodruff.
W. C. Abbott.
F. H. Freericks.
C. Mahlon Kline.
John C. Wallace.

The Chairman also announced the following committees provided for by the substitute resolutions previously offered by J. H. Beal and adopted by the Conference:

Committee on Form of Organization and Nominations:

J. H. Beal.
A. R. L. Dohme.
J. F. Finneran.
C. Mahlon Kline.
W. P. Stearns.

Committee on Resolutions:

W. C. Anderson.
Adolph Rosengarten.
C. A. West.
S. L. Hilton.
R. C. Stofer.

On motion the Conference then adjourned until 3 P. M.

(Second Session.)

The second session of the Conference was called to order at 3:30 P. M. by Chairman Wallace.

The Chairman stated that Dr. Hamilton Wright was present in accordance with the invitation previously extended to him, and requested him to address the Conference upon the provisions of the bill known as H. R. 25834.

Dr. Wright explained the relations between the latter bill and two other so-called Harrison Bills which related exclusively to the importation and manufacture of smoking opium, and requested the members of the Conference to point out their objections to the bill, H. R. 25834.

Mr. Freericks called attention to the fact that under the bill as it now read retail pharmacists would not be permitted to manufacture even the ordinary galenic preparations of opium, such as laudanum and paregoric.

Dr. Wright stated that this omission was due to an oversight, and that he would be glad to receive suggestions for its amendment.

W. C. Anderson moved, seconded by J. F. Finneran to amend as follows: In section one, after the words "give away" insert the following: "Dispenses or manufactures for sale to the consumer." The motion was adopted.

F. H. Freericks called attention to the fact that the bill as it read at present would require a druggist or veterinary physician to take out a wholesaler's license before he could dispense more than one pint of a colic mixture containing opium intended to be administered to a horse. Mixtures of this kind frequently amounted to the measure of a pint and a half, or one quart. He also called at-

attention to the fact the bill apparently placed no restriction upon the sale of solid preparations of opium in any quantity.

The subject was further discussed by Messrs. Wright, Freericks, Kline, Wallace, Beal and Anderson, each speaking several times.

On motion the Conference then adjourned to meet at the office of Representative Harrison at the Congressional Office Building, for further discussion of the bill, the Conference to re-assemble in Room 128, Hotel Willard, at 7 P. M.

(Third Session.)

The third session of the conference was called to order in room 128 Hotel Willard, Jan. 15, at 8:30 P. M.

The Chairman stated that the first business in order was the consideration of the reports of the committees previously appointed.

J. H. Beal for the Committee on Form of Organization and Nominations, first presented the report upon Form of Organization as follows:

"The Committee on Form of Organization and Nominations respectfully reports and recommends the adoption of the following Code of Rules and Regulations:

CODE OF RULES AND REGULATIONS OF THE NATIONAL DRUG TRADE CONFERENCE.

"(1) This organization shall be known as the National Drug Trade Conference.

"(2) The Conference shall consist of three regularly accredited delegates from each of the following organizations:

The American Pharmaceutical Association,

The National Association of Retail Druggists,

The National Wholesale Druggists' Association,

The National Association of Manufacturers of Medicinal Products,

The American Association of Pharmaceutical Chemists,

And three delegates from each of such other national medical and pharmaceutical organizations as may be hereafter admitted to membership by a majority vote at any regularly called meeting of the Conference. The presence of nine properly accredited delegates shall be necessary for a quorum at any meeting.

"Any duly organized medical or pharmaceutical organization shall have the right to be heard through its properly appointed representatives, and such representatives shall be entitled to the privileges of the floor.

"Properly accredited delegates who are unable to attend the meetings may designate in writing persons who may act as their alternates and such alternates shall have all of the rights and privileges of the delegates whom they represent.

"(3) The objects of the Conference shall be to consider and report to the respective organizations represented therein upon matters of legislation, or upon any other matters of national and general importance to the drug trade.

"The Conference will not assume to express the views of, nor to bind its respective constituent organizations, except in so far as it may be authorized so to do by such constituent organizations.

"(4) The officers of the Conference shall consist of a President, three Vice Presidents, and a Secretary. If necessary the Secretary shall also act as Treasurer of the Conference.

All officers shall be elected by the ballots of regularly accredited delegates, and shall hold their respective offices for one year, and until their successors shall have been elected and installed.

"(5) There shall be one standing committee to be known as the Executive Committee, consisting of the President, the Secretary and three other delegates nominated from the floor and elected by ballot.

The Executive Committee shall act as a committee on credentials, and shall have charge of the business of the Conference during the intervals between meetings, all of its actions being subject to review by the Conference.

"(6) Meetings of the Conference shall be called by the President upon the written request of any five delegates, and not less than ten days' notice shall be given of the time and place of such meetings.

"(7) During the intervals between meetings the business of the Conference and of the Executive Committee may be transacted by mail. A motion put by mail shall not require a second, and a majority vote of the delegates, or of the members of the Executive Committee, shall be required for the adoption of any motion or resolution.

"(8) Except as herein otherwise provided, the generally accepted rules of parliamentary law shall govern the deliberations of the Conference.

"(9) Proposals to amend these rules and regulations shall be made in writing at one session of the Conference and voted upon at the next succeeding session, and shall require the vote of a majority of the delegates present for adoption."

(Signed) J. H. BEAL, Chairman.
WILLARD F. STEARNS.
A. R. L. DOHME.
J. F. FINNERAN.
C. MAHLON KLINE.

On motion of C. A. West, accompanied by W. C. Abbott the report was received, and on a further motion by C. A. West, seconded by W. C. Abbott the resolutions were approved and adopted.

Mr. Beal then presented the report on nominations as follows:

For President—John C. Wallace, New Castle, Pa.
For Secretary—Charles M. Woodruff, Detroit, Mich.
For First Vice President—Charles A. West, Boston, Mass.
For Second Vice President—W. C. Anderson, Brooklyn, N. Y.
For Third Vice President—W. C. Abbott, Chicago, Ill.

On motion of J. F. Finneran, seconded by Adolph Rosengarten the report was received and the Secretary was instructed to cast the ballot of the Conference for the nominees, which was done accordingly.

The Chairman then announced that the officers above named were duly elected and called upon C. M. Woodruff to assume his place at the Secretary's desk.

J. H. BEAL, Temporary Secretary.

Mr. Woodruff assumed his duties as Secretary.

Mr. I. Wilbert presented the following telegram:

CHICAGO, January 15, '13.

Mr. I. Wilbert, 25th and E. Sts. N. W., Washington, D. C.:

Abbott wires from Washington: "Exceedingly important American Medical Association be represented Conference Drug interests Willard Hotel now in session." Please represent association.

GEORGE H. SIMMONS.

On motion of Wm. C. Anderson, seconded by J. H. Beal the privileges of the floor were granted to Mr. Wilbert.

Moved by Mr. Beal and seconded by Mr. C. M. Kline that the Committee on Resolutions prepare a resolution expressive of the general views of the Conference on Federal narcotic legislation, so that the position of the Conference may not be misunderstood because of any opposition to any particular measure.

Motion carried and Committee on Resolutions retired.

A. R. L. Dohme moved and J. H. Beal seconded the adoption of the following resolution which was unanimously carried:

Resolved, That the National Drug Conference hereby expresses its approval of uniform state and federal drug legislation in line with the action of associations in other lines and hereby instructs its executive committee to endeavor to bring about such uniform drug legislation in state and nation.

Mr. C. M. Kline read the following communication which was ordered filed without action:

PHILADELPHIA, PA., January 13, 1913.

Mr. C. Mahlon Kline, Philadelphia, Pa.:

DEAR SIR—When you meet with the "National Legislative Conference" on January 15, 1912, at Washington, D. C., I would suggest that your Conference recommend to the National Association of Boards of Pharmacy the establishment of "National Registration Certificates" for Qualified Assistants and Registered Pharmacists examined under the State Pharmacy Laws.

In other words, that the National Association of Boards of Pharmacy act as a national clearing-house for the certificates issued by the 52 Boards of Pharmacy, according to the following plan:

1. The existing National Association of Boards of Pharmacy shall be incorporated under the laws of the District of Columbia, Washington, D. C., as was "The United States Pharmacopoeial Convention" in 1900.

2. The N. A. B. P. shall frame certain standards of examination and registration which shall be reasonable and representative of the best requirements of as many of the State Pharmacy Laws as possible.

3. The N. A. B. P. shall keep a register of all State Boards that meet these standards and are willing to cooperate with the N. A. B. P.

4. The N. A. B. P. shall issue, without examination, certificates of national registration to any registrant of any State which meets the standards of the N. A. B. P., provided, that if a State refuses to recognize the certificates of the N. A. B. P. for registration in its State, then the registrants of such a State shall be denied national registration; and each registered State Board shall be advised of such action, and act accordingly.

5. The cost of each national certificate issued by the N. A. B. P. shall be nominal, say, one dollar.

6. The N. A. B. P. certificates shall be registered by each State Board registered by the N. A. B. P., at such fees for registration as each individual State Board may ask of the registrant, preferably large enough to cover both the regular fees for examination and registration of the State.

7. If the Pharmacy Law of a State does not give its Board of Pharmacy the authority to register the registrant of another State without examination, then it is suggested that amendments to the law be secured by the State Board permitting the registration of ex-state registrants without examination, under rules and regulations to be framed by the State Board; and the way would then be opened for the State Board to cooperate with the National Association of Boards of Pharmacy.

8. The N. A. B. P. should have instead of a Secretary-Treasurer (as now), a Permanent Secretary, preferably residing at Washington, D. C., who should be the Executive officer of the Board, subject to the control of the Board. It should have, also, a Treasurer.

9. All moneys received for certification by the N. A. B. P. should be turned over by the Secretary to the Treasurer at least once a month, and used for promoting the standardization of pharmacy laws and the betterment of pharmaceutical education, in whatever way the Board may deem best.

It will be especially noted that the movement here proposed is not to supersede the work of the State Boards of Pharmacy in any way; it is simply to supplement their work, and provide a more ready means of exchanging state certificates than can be had by a direct exchange with each one of the 52 different states and dependencies. It would make the State certificates more valuable by making reciprocal registration most easy.

In addition the movement would standardize the conditions of examination and registration by the State Boards, and render possible all the good effects that would flow from a National Pharmacy law, without any of its disadvantages.

If the medical profession, with all its wonderful machinery, finds it impossible (as it does) to get a National Medical Law through Congress, how much more difficult would it be for Pharmacy to secure a national law?

Apart from this, it is open to grave doubt whether a national pharmacy law and the abolition of the State pharmacy laws would be a wise procedure. Pharmacy laws are in the nature of police legislation, and certainly, in matters of pharmacy, at least, each State is most competent to pass judgment as to what it needs in pharmaceutical legislation.

There is room both for the State Boards and the N. A. B. P. The former are necessary for the pharmaceutical police work of each State, and the latter is essential to give flexibility to the State Certificates by permitting the holders thereof to practice pharmacy in any one or all of the different states of the Union.

The officers of the N. A. B. P. are: William Mittelbach, Boonville, Mo., President; L. P. Gammon, First Vice President, Boston, Mass.; H. C. Shuptrine, Second Vice President, Savannah, Ga.; Miss Kittie Harbord, Salem, Ore., Third Vice President, and A. F. Sala, Secretary-Treasurer, Winchester, Ind. Very truly yours, J. W. ENGLAND.

Mr. Frank H. Freericks moved, and J. H. Beal seconded, that a committee of five, one from each association be appointed to take up the Harrison and other bills with a view of agreeing upon some compromise if possible, and that the Committee inform Dr. Hamilton Wright of its intended work.

Mr. Woodruff moved as a substitute that the Harrison Bill introduced January 14, be made the special order for tomorrow at 10 A. M. and that it be then considered section by section.

Seconded by C. M. Kline, and, rising vote being taken, duly carried by a vote of 7 to 6.

The appointment by Mr. Frank H. Freericks of Mr. Fred A. Hubbard, of Boston, to act as his alternate during the remaining sessions was then presented and accepted.

The Committee on Resolutions then presented the following which on motion and second was unanimously adopted and the Secretary was instructed to send a copy to Hon. Burton Harrison.

"The National Drug Trade Conference in session in Washington, D. C., this fifteenth day of January, 1913, herewith submit by unanimous resolution that this Conference is heartily in favor of Federal Legislation of such a nature as to bring under control the importation and the interstate traffic in so called habit-forming drugs in such a manner as to prevent their illegitimate use, without placing unnecessary burdens upon the manufacturer, jobber, retailer, physician, or veterinarian."

On motion the Conference then adjourned to meet at the same place Thursday, January 16, at 10 o'clock A. M.

(Fourth Session.)

Thursday morning, January 16, 10 A. M.

Conference called to order by the Chairman, Mr. John C. Wallace.

Mr. George C. Hall presented his credentials as alternate of Mr. R. C. Stoier, delegate from the American Association of Pharmaceutical Chemists, who was unable to remain at the Conference.

On motion of J. H. Beal, seconded by C. M. Kline of the American Pharmaceutical Association, the Conference proceeded to the election of three members who with the President and Secretary should constitute the Executive Committee.

J. H. Beal, of the American Pharmaceutical Association, Mr. C. M. Kline, of the National Wholesale Druggists Association, Mr. Willard Stearns, of the American Association of Pharmaceutical Chemists, and Mr. James F. Finneran, of the National Association of Retail Druggists, were duly nominated.

The President appointed Wm. C. Anderson, of the National Association of Retail Druggists, as judge of the election and Mr. Adolph G. Rosengarten, of the National Association of Manufacturers of Medicinal Products, and Mr. Fred A. Hubbard, of the National Association of Retail Druggists, as tellers.

A ballot being taken it was announced that J. H. Beal had received 11 votes, C. M. Kline 12 votes, Willard Stearns 5 votes, and James F. Finneran 8 votes.

The President then announced J. H. Beal, Mr. C. M. Kline and Mr. James F. Finneran duly elected as members of the Executive Committee.

On motion made by J. H. Beal and seconded by W. C. Abbott, the President of the Conference was made Chairman of the Executive Committee.

The Conference then proceeded to the order of the day and took up the consideration of the Harrison Bill introduced January 14, 1913, known as Bill No. 28023; during which discussion Dr. M. I. Wilbert offered a suggestion respecting a coupon order scheme in lieu of the subsidiary stamp and record features of the bill.

On motion of G. C. Hall, seconded by Wm. C. Anderson the word "dispenses" was inserted after the word "sells" in line 7, page 1.

On motion of C. M. Kline, seconded by J. F. Finneran the words "any of" were inserted after the word "away" in line 8, page 1.

On motion of C. M. Kline, seconded by W. C. Abbott the special tax of \$100 was reduced to \$50, and the special tax of \$5 to \$1.

C. M. Kline moved that the sentence beginning with the word "every" in line 17, page 2 be made to read: "Every person who engages in the cultivation of the opium poppy or coca plant in the United States of America for the manufacture of opium or cocaine shall be regarded as a producer."

Seconded and carried.

C. M. Kline moved that the words "or its equivalent in solid or semisolid" be inserted after the word liquid in line 9, page 3 and that the following word "preparation" be made plural.

Seconded and carried.

Wm. C. Anderson moved that the following be inserted after the word "jobber" in line 13, page 3. "Provided, that nothing in this act shall prohibit sales by retailers on written order to physicians, dentists and veterinarians, hospitals, colleges, scientific or public institutions of any of the foregoing drugs in any quantity, or the compounding of prescriptions of physicians, dentists or veterinarians duly registered under this act."

Seconded and carried.

Wm. C. Anderson moved that the phrase in line 13, page 3, reading "every other person who sells or gives away" be made to read: "Every other person who manufacturers, compounds, sells, dispenses or gives away."

Seconded and carried.

A. G. Rosengarten moved that the word "special" be inserted before the word tax in line 23, page 3.

Seconded and carried.

G. C. Hall moved that the words "less than \$100 nor" be deleted from line 6, page 4; and that the words "less than \$25 nor" be deleted from line 12, page 4.

Seconded by J. H. Beal and carried.

Wm. C. Anderson moved that the phrase "Every person who sells or gives away" in line 7 on page 4 be made to read: "Every person who manufactures, compounds, dispenses, sells, deals in, distributes, or gives away."

Seconded and carried.

J. H. Beal moved the adoption of the following resolution:

Resolved, That a special committee be appointed to draft a section providing for the use of coupon orders or stamps for the identification of licensed dealers, etc., to be recommended by this Conference for insertion in H. R. 28023 in lieu of the provisions of the latter requiring the affixing of identification stamps on subdivided package of the drugs therein named.

Seconded by Dr. Wm. C. Abbott.

J. H. Beal moved that M. I. Wilbert, the representative of the American

Medical Association, having suggested the plan, be invited to meet and counsel with the Committee.

Seconded by Mr. C. M. Kline.

Carried.

The President appointed the following to constitute the foregoing committee:

J. H. Beal.
A. R. L. Dohme.
C. M. Kline.
William C. Anderson.
H. A. Stiles.

Having retired and considered the matter the Committee returned and reported the following to be inserted in lieu of all from and including line 21, page 5, to and including line 14 on page 6:

"Provided, That where such original drugs, to wit, opium and coca leaves, after payment of the revenue taxes thereon, are subdivided, further manufactured, compounded or sold by any person who has paid the special revenue taxes imposed by this act, the same may be disposed of to dealers registered under this act, on the presentation of a duly authorized order on a blank provided by the Commissioner of the Internal Revenue and sold by him in blank duplicate form to the registered wholesale or retail dealers in any given Internal Revenue district. And every wholesale or retail dealer shall be required to preserve a true copy of the completed order for two years and every wholesale dealer shall preserve the orders received by him for a period of two years arranged in such a way as to be readily accessible to inspection by duly authorized Federal or State authorities."

On motion duly seconded and carried the recommendation was adopted.

A. G. Rosengarten moved that the words "in lieu of the" in line 4, page 7 be stricken out and the words "of equivalent value to the" be inserted instead thereof, and the words beginning with and including "those" in line 6, page 7 and all words in lines 7, 8, 9 and 10, page 7 be stricken out.

Seconded and carried.

A. G. Rosengarten moved that the "labels and marks" in lines 17 and 18, page 7, be stricken out and the words "revenue tax stamps" inserted in lieu thereof.

Seconded and carried.

Wm. C. Anderson moved that the entire Section 3 be stricken out.

Seconded and lost.

C. M. Kline moved the word "producing" be inserted after the word "person" in line 22, page 7.

Seconded and carried.

J. H. Beal moved that the words "and give such bonds" in line 1, page 8, be stricken out, and that the words "regarding his or their purchases of the aforesaid drugs, their salts, derivatives or preparations" be inserted in lieu thereof.

Seconded and carried.

A. G. Rosengarten moved that in line 18, page 8 a colon be put after the word "preparations," and the following added "provided, further, that nothing contained in this section shall apply to the delivery of prescriptions of physicians.

dentists or veterinarians duly registered under this act compounded by a person duly registered under this act.

Seconded and carried.

On motion duly seconded and carried the words "marks and labels" in line 1, page 9, and the words "and the labels and marks" in line 6, page 9, were stricken out.

On motion duly seconded and carried the words "deals in, distributes, dispenses" were inserted after the word "transfers" in line 9, page 9.

C. M. Kline moved that section 6 be further amended by striking out the words "or to which the labels or marks imposed by this Act have not been affixed" in lines 12 and 13, and the words "or any regulation issued thereunder" in lines 14 and 15, and the words "less than \$100 nor" in lines 15 and 16, and make the fine "\$5000" in line 16 read "\$2000," and by striking out the words "less than one year nor" in lines 16 and 17.

Seconded and carried.

The Conference then adjourned for lunch until 2 o'clock P. M.

The Conference reconvened at 2 o'clock P. M.

Mr. Charles A. West, of Boston, stated he had been in conference with Dr. Hamilton Wright, and announced several concessions he had obtained from Dr. Wright, and left to entrain for Boston; whereupon it was moved, seconded and carried that the Conference proceed to finish its consideration of the bill and take up the amendments offered by Mr. West later.

Mr. C. M. Kline moved that the phrase in lines 2 and 3, page 12, reading, "persons making sales, distribution or disposition" be stricken out and the words "the manufacture, compounding, sale, giving away, distribution or dispensing" be substituted.

Seconded and carried.

Mr. Fred A. Hubbard moved that the word "one-fourth" in line 5, page 12, be made to read "one-third."

Seconded and carried.

J. H. Beal moved that the words "nor to powder of ipecac and opium commonly known as Dover's powders" be stricken out, and that the word "or" immediately following be made to read "nor."

Seconded by W. C. Anderson and carried.

Mr. C. M. Kline moved that the words "or other preparations" be inserted after the word "ointment" in line 9, page 12.

Seconded and carried.

Dr. Wm. C. Anderson moved that the phrase "sold, distributed or disposed of" in line 11 be made to read "manufactured, compounded, sold, given away, distributed or dispensed."

Seconded and carried.

The Conference then took up the amendments suggested by Mr. Charles A. West and Mr. C. M. Kline moved that the amendment changing the special stamp tax of \$100 to \$25 be accepted in lieu of the change the Conference had already adopted.

Seconded and carried.

Mr. G. C. Hall moved that the definition of producer as proposed by Dr. Wright be adopted.

Seconded and carried.

The definition is as follows:

"Every person who engages in the cultivation of the poppy plant for the production of opium, its salts or derivatives or in the cultivation of the coca plant for the production of cocaine, its salts or derivatives in the United States of America, shall be regarded as a producer."

Dr. Wm. C. Anderson moved the adoption of the suggestion that the words beginning with and including "every" in line 13, page 3 and ending with and including "retailer" in line 15, page 3, and the substitution therefor of the following:

"Provided further, That the foregoing definition of wholesale dealer or jobber and the special tax relating thereto shall not apply to the retailer as herein-after defined in the manufacture and compounding of preparations of opium, and coca leaves, their salts, preparations and derivatives, for sale to consumers and other retailers; nor to the sale of opium, coca leaves, their salts, derivatives or preparations to hospitals under the supervision of a person duly registered under the provisions of this act, nor to scientific institutions; nor shall such definition apply to persons qualified by state or territorial law, or the laws of the District of Columbia, to prescribe, dispense or use in the practice of their professions any of the aforesaid drugs, and who are registered under the provisions of this act. Every person qualified by State or territorial law, or by the laws of the District of Columbia, to manufacture, compound, sell, give away, prescribe, dispense or use in the practice of his profession any of the aforesaid drugs, their salts, derivatives or preparations, shall be regarded as a retailer."

Seconded and adopted.

Dr. Wm. C. Anderson moved that the suggestion that the words "or dispensing" be stricken out of line 24, page 7, be not concurred in.

Seconded and carried.

Mr. Fred A. Hubbard moved that the suggestion that the words "retail manufacturers and dispensers" in line 6, page 10, be stricken out and the words "and retailers" inserted be accepted.

Seconded and carried.

Dr. W. C. Abbott moved that the suggestion that all after word "Act" (the word act exclusive) in the first paragraph on page 11 be stricken out, be accepted.

Seconded and carried.

Dr. A. R. L. Dohme moved that the suggestion that the word "words" in line 14, page 11, be changed to read "names" be accepted.

Seconded and carried.

The President then appointed Dr. Wm. C. Abbott to get in touch with Mr. Harrison and Dr. Wright and inform them that the Conference was ready to report what changes they asked in the bill.

Mr. H. A. Stiles moved that the Committee on Ways and Means be asked to suggest some provision to protect honest dealers from careless or malicious

clerks who might, notwithstanding specific instructions from employers, sell opium, etc., contrary to the provisions of the act.

Seconded and carried.

Dr. A. R. L. Dohme moved that the Secretary be instructed to print the minutes and Constitution of the Conference and send a copy to each of the delegates, the expense to be pro rated among the Associations represented.

Seconded by Prof. J. H. Beal and carried.

The Secretary moved and Prof. J. H. Beal seconded the adoption of the following resolutions:

"WHEREAS, The Conference has been organized to secure uniformity in State and Federal laws relating to the adulteration and misbranding of drugs, and

WHEREAS, Such uniformity is now being sought by the Commission on Uniform Laws and also by the American Bar Association, and

WHEREAS, The American Bar Association has recommended that such uniformity be secured by the various states conforming their laws to the federal act, and

WHEREAS, Further hasty state and federal legislation respecting the adulteration and misbranding of drugs will add to the confusion now existing, therefore, be it

Resolved, That this National Drug Trade Conference earnestly recommend that no new laws relating to the adulteration and misbranding of drugs be enacted by any State during the present session of its legislature, unless its purpose be to bring the law in conformity with the federal law; and be it further

Resolved, That this Conference recommend that the federal law should not be amended prior to the publication of the new revisions of the United States Pharmacopoeia and National Formulary lest greater lack of uniformity be effected."

Adopted.

Dr. W. C. Abbott then announced that Mr. Harrison and Dr. Wright would meet the Conference at 9 o'clock P. M. Whereupon the hour being 7:30 P. M. and the Conference having been in continuous session since 2 P. M. on motion duly seconded and carried the Conference adjourned until 9 o'clock P. M.

(Fifth Session.)

Conference called to order, Jan. 17, at 9 o'clock P. M.

Hon. Burton Harrison and Dr. Hamilton Wright appeared and were introduced to the Conference by its President.

Dr. Wright explained his proposed amendments which were duly discussed, and the acceptance of most of them announced by the Secretary in accordance with the previous action of the Conference.

At about 10:45 P. M. Mr. Harrison excused himself, stating he had left Mrs. Harrison at the theatre, and that if he did not return she would conclude that he had taken a fatal dose of some narcotic.

After Mr. Harrison had retired, the Conference presented its amendments to Dr. Wright and proceeded until the proposed substitute of the certified order plan for the labels or marks on subdivided packages, compounds, etc., was reached, when Dr. Wright tried to convince the Conference that this was impossible and left the Conference, stating that if the Conference wanted to see him the next day, they could call upon him at the State Department any time after 10 o'clock.

After remarks by Prof. J. H. Beal, Mr. A. G. Rosengarten, Mr. C. M. Kline, Dr. W. C. Abbott, Mr. M. I. Wilbert, and nearly all the delegates it was decided without dissent that the Conference should insist upon the amendments requested.

Dr. A. R. L. Dohme moved and Prof. J. H. Beal seconded that a committee of five be appointed to remain over, have a complete copy of the Conference's bill prepared, effect a meeting with Mr. Harrison and represent to him that the Conference could not support the measure that bore his name unless his bill introduced January 14, 1913, and known as number 28023 was amended as the Conference had agreed.

Carried unanimously and enthusiastically.

The President of the Conference asked consent to name M. I. Wilbert as one of the Committee, although he was not a member of the Conference.

Mr. Wilbert suggested that this was not necessary; that he would accompany the Committee and act as an advocate the same as he had acted as an advisor in framing the contested provision.

The President of the Conference then appointed the following Committee to attend the Conference with Mr. Burton Harrison:

Mr. Charles M. Woodruff.
Mr. Adolph G. Rosengarten.
Mr. C. M. Kline.
Mr. James F. Finneran.
Dr. W. C. Abbott.

Dr. J. H. Beal moved that the sense of the Conference was that it should have a meeting once a year, preferably at the beginning of the legislative sessions.

Seconded by Dr. W. C. Abbott and carried.

Mr. H. C. Stofer moved a vote of thanks to the officers of the Conference for the efficient and faithful manner in which they had performed their functions.

Seconded and carried.

Thereupon, on motion of Dr. J. H. Beal, seconded by Dr. W. C. Abbott the Conference adjourned to meet at the call of the President, in accordance with the rules of the Conference.

C. M. WOODRUFF,
Secretary.

Reports of A. Ph. A. Committers

REPORT OF COMMITTEE ON UNOFFICIAL STANDARDS.

GEO. M. BERINGER, PH. M., CAMDEN, N. J., CHAIRMAN.

During the past year there was prepared a list of the articles entering into the formulas that had been admitted in the revision of the National Formulary. As the work on the revision of the National Formulary has progressed, several such lists were submitted by members of that committee, but they were necessarily incomplete. After the Boston meeting, the scope of the N. F. IV could be considered as practically established so far as additions and deletions and the tentative formulas for the new preparations. A review of the entire correspondence on the National Formulary in the Bulletin of the American Pharmaceutical Association and the circular letters of the Committee was necessary in order to compile a list that would exhibit the work still required of the Committee on Unofficial Standards in their assigned duty to cooperate with the National Formulary committee in the establishing of standards for the non-pharmacopœial articles used in the Formulary.

On the basis of this compilation, the new assignment of subjects to the individual members of our Committee for special study and report was made. The work accomplished in the past year of the Association is, in part, represented by the forty-five monographs that have been approved by the Committee and which are presented herewith for publication. There are still a number of reports before the Committee on which the discussions have not yet progressed to a conclusion. In addition, a number of the assigned subjects are still under study by the referees.

The work accomplished has not measured up to our anticipation, and it is but fair to the members to offer in extenuation some explanation.

A study of the reports submitted by this Committee will exhibit the wide range of subjects that have to be considered, coming from all quarters of the globe, and from the animal, vegetable and mineral kingdoms. For some of these articles, authoritative statements may be found in the foreign pharmacopœias, which, after confirmation by a referee, may serve as the basis for our standards. However, many more of the articles that we have to consider are not mentioned in any of the pharmacopœias and the work on standards for such must be largely based upon examination of the commercial products used. These require much study, investigation and experimentation.

It is probable that in the desire for accuracy, the referees have, in many cases, gone into details and extensive studies that may not be considered necessary for

our work, but just such conscientious labor is required if the standards that we propose are to be adopted and become the legal authority.

The members of this Committee are all actively engaged in other duties, and so can spare but a portion of their time to the assignments in connection with this work. Ten of our members have been drafted into the Committee of Revision of the United States Pharmacopœia and four of these are chairmen of important sub-committees and members of the Executive Committee of the Committee of Revision. Hence, it will be understood how these other demands on time and energy have interfered with the anticipated progress in the establishing of standards for non-pharmacopœial articles. Nevertheless, we hope that the special work relating to the National Formulary standards may be completed by the time such will be needed for the publication of the revised edition of the Formulary.

As the scope of the U. S. P. IX was gradually decided upon, it became more and more apparent that a number of the articles our Committee had under consideration, and for some of which we had already adopted standards, would be included in the Pharmacopœia. By a happy coincidence, much of this work in the pharmacopœial revision fell upon members of our Committee who had already considered these topics, and thus their previous labors will aid in expediting the revision of the Pharmacopœia. This is but another illustration of the close relationship that exists between the work of the Pharmacopœial Revision Committee, the Committee on National Formulary and the Committee on Unofficial Standards, and emphasizes the necessity for cooperation of these several committees and the need for harmonizing the standards that each establishes.

The terms of the following members expire this year by limitation: Henry Kraemer, Eustace H. Gane, B. L. Murray and W. A. Puckner, and it is incumbent upon the Council to elect their successors. Changes in the personnel of the Committee should be avoided, as each change causes interruption and delay in the progress of the work, and, unless necessary, change is undesirable. The Council must likewise designate the chairman for the ensuing year.

If it be the desire of the Council that this Committee be continued, then sufficient appropriation must be made to meet the expenses of the coming year, and I recommend that a sum of \$250.00 be placed at the command of the Committee on Standards for Unofficial Drugs, Pharmaceutical Preparation and Chemical Products to meet the expenses necessitated by their work.

APPROVED MONOGRAPHS SUBMITTED AS STANDARDS FOR UN-OFFICIAL DRUGS AND CHEMICAL PRODUCTS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed

standards, are requested to send their criticisms and comments to the chairman of the committee, Geo. M. Beringer, 501 Federal St., Camden, N. J.

ALETRIS.

True Unicorn Root, Colic Root, Star Grass.

1. The dried rhizome and roots of *Aletris farinosa* L. (Fam. Liliaceae). Rhizome horizontal or slightly oblique, nearly cylindrical or laterally compressed above, from 2 to 4 cm. in length, 5 to 12 mm. in diameter; externally grayish brown, upper portion with circular stem scars from 3 to 7 mm. in diameter and with numerous leaf bases, the sides and lower portion with numerous tough, wiry, whitish or reddish brown roots which are more or less flexuose and provided with short branches; fracture short; internally light brown, cortex 1 to 2 mm. thick, central cylinder with numerous circular twisted and branching fibrovascular bundles; odor slight, acetous; taste sweetish, somewhat bitter.

2. Microscopic Examination.—The greater part of the drug consists of parenchyma cells which are filled with spherical or ellipsoidal starch grains, varying from 8 to 16 microns in diameter. Some of the parenchyma cells contain raphides, the latter being from 25 to 45 microns in length. The tracheae are reticulate or provided with simple pores and around these are several layers of lignified cells with thick walls and simple large oblique pores. The endodermis is composed of several layers of thick walled and closely lamellated cells of a deep yellow color and the cortex is readily separated.

AMMONIACUM.

Ammoniac.

1. The air dried gum resinous exudation from the stems of *Dorema Ammoniacum* Don. (Fam. Umbelliferae) and other species of *Dorema* growing in Persia and neighboring countries.

2. In roundish tears from 2 to 6 mm. or more in diameter, externally pale, yellowish brown, internally milk white, brittle when cold and breaking with a flat conchoidal and waxy fracture; or the tears are superficially united into irregular masses without any intervening dark colored substance. Odor peculiar, taste bitter, acrid and aromatic. It softens on warming without completely melting. Partly soluble in water and alcohol.

3. On boiling with 10 parts water it forms

a turbid liquid which is colored a dirty violet by ferric chloride T. S.

4. On fusing with alkali it yields resorcin.

5. On complete extraction with boiling alcohol, filtering, and drying the residue at 100° C., not more than 40 percent. of insoluble matter should remain. The ash should not amount to over 7.5% and moisture 2.5-12%.

6. If five grams finely broken, be boiled for one-fourth hour with 15 Cc. hydrochloric acid and filtered, the clear filtrate should not become fluorescent on adding excess of ammonia water (absence of galbanum and gum resin of *Ferula tingitana* or African ammoniacum).

AMMONII ICHTHYOSULPHONAS.

Ammonium Ichthyosulphonate.

1. Ammonium ichthyosulphonate is an aqueous solution, the solids of which consist largely of the ammonium salts of sulphonic acids, which latter have been prepared by sulphonating the tar-like distillate obtained from certain bituminous shales which contain the fossil remain of fishes.

2. Ammonium ichthyosulphonate is a reddish-brown to brown-black, syrupy liquid having a characteristic empyreumatic odor and burning taste.

3. It should be completely soluble in water; incompletely soluble in alcohol or ether but nearly soluble in a mixture of equal volumes of alcohol and ether; also soluble in a mixture of equal volumes of alcohol, water and ether. It is miscible with glycerin, oils and fats.

4. The aqueous solution of ammonium ichthyosulphonate (1-10) has a faintly acid reaction upon blue litmus paper.

5. The aqueous solution of ammonium ichthyosulphonate (1-10) yields a greenish-black, resin-like precipitate upon the addition of hydrochloric acid. This precipitate is nearly insoluble in ether; it is partially soluble in alcohol; soluble in water but if dissolved in the latter solvent it may again be precipitated from solution by the addition of hydrochloric acid.

6. With barium chloride T. S. the aqueous solution of ammonium ichthyosulphonate (1-10) gives a brownish-black precipitate

which is insoluble in diluted hydrochloric acid.

7. If the aqueous solution (1-10) be boiled with potassium hydroxide T. S. ammonia should be evolved.

8. Ammonium ichthyosulphonate is incompatible with acid and saline solutions, fixed alkalies, their carbonates and iodides, alkaloidal salts and mercuric chloride.

9. If 1 Gm. of ammonium ichthyosulphonate be ignited it should leave not more than 0.001 Gm. of residue. If 10 Gm. of ammonium ichthyosulphonate be diluted with 90 Cc. of water, the mixture placed in a glass-stoppered cylinder and allowed to remain undisturbed for 24 hours, no deposit should form.

10. If dried at 100° C. (212° F.) ammonium ichthyosulphonate should not lose more than 47.0 percent. of its weight (absence of an undue amount of water).

11. If from 5 Gm. to 6 Gm. of ammonium ichthyosulphonate be weighed into a flask, 25 Cc. of potassium hydroxide T. S. and 100 Cc. of water added, the mixture distilled until no more ammonia passes over, the distillate collected in 15 Cc. of normal sulphuric acid V. S. to which 1 drop of methyl orange T. S. has been added, and the excess of acid then titrated with tenth-normal potassium hydroxide, V. S., the amount of normal sulphuric acid consumed should correspond to from 2.9 percent. to 3.4 percent. of total ammonia (NH_3).

12. If from 5 Gm. to 6 Gm. of ammonium ichthyosulphonate be weighed into a beaker, diluted with 50 Cc. of water, 10 Cc. of a 10 percent. solution of albumen added, followed by 5 portions of 5 Cc. each of diluted hydrochloric acid, shaking after each addition, the mixture made up to a volume of 500 Cc. and filtered through a dry filter, and if 200 Cc. of the filtrate be heated to boiling, 10 Cc. of barium chloride T. S. added, the mixture allowed to stand for 24 hours, the precipitate of barium sulphate collected, ignited and weighed in the usual way, the weight of barium sulphate obtained should correspond to from 5.7 percent. to 6.2 percent. of ammonium sulphate.

13. If from 0.5 Gm. to 1 Gm. of ammonium ichthyosulphonate be weighed into a Kjeldahl flask, diluted with 20 Cc. of water, 5 Gm. of potassium chlorate added, followed by 30 Cc. of nitric acid, the mixture evaporated to about 5 Cc., 25 Cc. of hydrochloric acid added, this solution evaporated to about 5

Cc., 25 Cc. of hydrochloric acid again added, this solution evaporated to about 5 Cc., 100 Cc. of water added, the solution heated to boiling, 10 Cc. of barium chloride T. S. added, the mixture allowed to stand for 24 hours, the precipitate of barium sulphate collected, heated and weighed in the usual way, the weight of barium sulphate should correspond to at least 10 percent. of total sulphur.

14. If the ammonia contained in the ammonium sulphate as previously determined in ammonium ichthyosulphonate be calculated, and the result subtracted from the "total ammonia" as previously determined, the remainder should represent the ammonia combined with the "organic sulphuric acids." If this value be multiplied by 1.85 the result should represent the sulphur present in the sulphonic acids in an oxidized state, i. e., "sulphonic sulphur."

15. If the sulphur contained in the ammonium sulphate as previously determined in ammonium ichthyosulphonate be calculated, and the result subtracted from the "total sulphur" as previously determined, the remainder should represent the sulphur present in the organic-sulphonic acids contained in the substance.

16. If the "sulphonic" sulphur in ammonium ichthyosulphonate as previously calculated be subtracted from the sulphur in the organic sulphonic as previously calculated, the remainder should correspond to at least 5.5 percent. of "organic" ("sulphidic") sulphur.

AMMONII PHOSPHAS.

Ammonium Phosphate.

1. A mixture, in somewhat varying proportions, of diammonium hydrogen phosphate [$(\text{NH}_4)_2\text{HPO}_4=132.13$] and ammonium dihydrogen phosphate [$\text{NH}_4\text{H}_2\text{PO}_4=115.09$]. It should contain not less than 98 percent. of these two salts and not less than 20 percent. of combined ammonia (NH_3). It should be kept in well-stoppered bottles in a cool place.

2. Colorless crystals, or a white crystalline powder, which lose ammonia on exposure to the air.

3. Soluble in about 4 parts of water, insoluble in alcohol. The aqueous solution (1:20) is alkaline to litmus paper.

4. Separate portions of the aqueous solution (1:20) yield with magnesia T. S. a white precipitate, with silver nitrate T. S. a yellow

precipitate, and upon warming with ammonium molybdate T. S. a yellow precipitate.

5. A clear solution should result on dissolving 1 Gm. in 20 Cc. of water (limit of calcium, aluminum, etc.).

6. The aqueous solution (1:20) should not respond to the U. S. P. VIII Time Limit Test for heavy metals.

7. If 5 Cc. of the aqueous solution (1:20) be evaporated with 2 Cc. of nitric acid to dryness on the water bath, the solution of the residue in 5 Cc. of water should not respond to the U. S. P. VIII Modified Gutzeit's Test for arsenic.

8. An aqueous solution of the salt (1 in 100) acidulated with nitric acid should not be rendered more than slightly opalescent by silver nitrate T. S. (Limit of chlorides).

9. Weigh about 0.2 Gm. of the salt, dissolve it in 25 Cc. of water in a 200 Cc. volumetric flask, and add 100 Cc. tenth-normal silver nitrate V. S. Shake thoroughly for a few minutes, then add zinc oxide (free from chloride) in small successive portions, shaking vigorously after each addition, until the mixture is no longer acid to litmus paper. Dilute the contents of the flask to 200 Cc. with water, mix thoroughly, and filter at once. Strongly acidulate with colorless nitric acid 100 Cc. of the filtrate which represents one-half of the ammonium phosphate taken, and titrate the excess of silver nitrate with tenth-normal potassium sulphocyanate V. S., using ferric ammonium sulphate as indicator. Each Cc. of tenth-normal silver nitrate V. S. corresponds to 0.003269 Gm. of phosphoric acid (H_3PO_4).

10. Dissolve about 1.5 Gm. of the salt accurately weighed, in about 300 Cc. of water, add about 50 Cc. of 25 percent. sodium hydroxide solution, and distill the liberated ammonia into an excess of normal hydrochloric acid solution. Titrate the excess of acid with normal sodium hydroxide V. S., and calculate the percentage of ammonia (NH_3). The combined percentages of ammonia and of phosphoric acid found should represent not less than 98 percent. of ammonium phosphates.

ANTIMONIUM SULPHURATUM.

Sulphurated Antimony.

(Antimonium Oxy-sulphuratum Rubrum.
Kermes Mineral.)

1. Chiefly antimony trisulphide [$Sb_2S_3=336.2$] with small quantities of antimony tri-

oxide, sodium pyroantimonate, and free sulphur. It should contain not less than 45 percent of antimony, as determined by the method given below. It should be kept in well-stoppered bottles, protected from light.

2. A red-brown powder, becoming lighter in color on exposure to light, odorless and tasteless. Insoluble in water and in alcohol. One Gm. on warming with 10 Cc. of hydrochloric acid dissolves with the evolution of hydrogen sulphide, leaving a small residue composed chiefly of sulphur. The hydrochloric acid solution, after removal of hydrogen sulphide by heating the solution, yields a white precipitate when greatly diluted with water; the liquid separated from this precipitate yields an orange-red precipitate with hydrogen sulphide.

3. After shaking about 1 Gm. of Sulphurated Antimony with 20 Cc. of water, the filtered liquid should be neutral to litmus, remain clear on the addition of ammonium oxalate, and not become more than slightly turbid on the addition of barium chloride.

4. Boil 1 Gm. of Sulphurated Antimony with 100 Cc. of water until the volume is reduced to about 10 Cc. filter, and wash the residue thoroughly with water. The combined filtrate and washings, after evaporation to about 1 Cc., should not respond to Bettendorf's test for arsenic (U. S. P. VIII).

5. If about 1 Gm. Sulphurated Antimony accurately weighed be mixed with 20 Cc. of hydrochloric acid and a clear solution of 5 Gm. tartaric acid in 20 Cc. of water, the mixture heated on a water-bath until the vapors no longer blacken lead acetate test paper and filtered and the residue washed until the washings are neutral to litmus and dried at $100^\circ C$. the weight of this residue should not exceed 4 percent., and it should burn with the odor of sulphur dioxide, leaving not more than 0.2 percent. of ash.

6. Dilute the combined filtrate and washings from the preceding test to 100 Cc. Neutralize 25 Cc. of the solution with sodium carbonate, add 25 Cc. of a cold saturated solution of sodium bicarbonate, and at once titrate with tenth-normal iodine V. S., using starch solution as indicator. Each Cc. of the tenth-normal iodine solution corresponds to 0.00504 Gm. of Antimony (Sb.).

ARALIA RACEMOSA.

American Spikenard. (Spignet.)

1. The dried rhizome and roots of *Aralia*

racemosa Linné (*Fam. Araliaceae*), with not more than 5 percent. of adhering stem bases.

2. Rhizome of oblique growth, about 12 cm. long and 5 cm. thick, somewhat flattened, tortuous, pale-brown, somewhat annulately roughened, of fibrous fracture, frequently cut longitudinally, whitish internally; nodes approximate, each with a prominent stem about 3 cm. broad; roots numerous, of various lengths, from 5 to 25 mm. thick, usually cut longitudinally and furrowed, sometimes with transverse ridges and corky patches, light-brown or purplish-brown externally, whitish and spongy or porous internally; fracture of the cortex short, of the wood short and fibrous; odor aromatic, taste mucilaginous, pungent and slightly acid.

3. A transverse section of the root examined microscopically shows a thick bark with several zones of secretion reservoirs containing oil, a well-developed cork with one or more hypodermal layers of lignified cells, and a more or less distinctly radiate wood.

4. A microscopic examination of the powdered drug reveals spherical or angular single or two or more compound starch grains from 5 to 20 microns in diameter, rosette aggregates of calcium oxalate from 30 to 70 microns in diameter, tracheæ with scalariform or reticulate thickenings and simple or bordered pores, characteristic lignified cells from the hypodermis about 40 to 100 microns long and about one-half as broad, their walls showing simple pores. (Distinction from *Aralia nudicaulis*.)

5. When incinerated, it should yield not more than 10 percent. of ash.

ASARUM.

Canada Snake-root (Wild Ginger).

1. The dried rhizome of *Asarum canadense* Linné (*Fam. Aristolochiaceae*), with only an occasional leaf or flower present.

2. Of horizontal growth, occasionally branched, two-edged when young, quadrangular when older, finely striate, usually more or less twisted, 5 to 17 cm. long and 2 to 4 mm. thick; nodes enlarged with irregular scars from scales; dark-purplish-brown externally; fracture short, whitish internally, starchy or resinous; odor aromatic, non-irritating upon heating; taste pungent and bitter; attached roots few, 5 to 7 cm. long and not over 1 mm. thick, having from 4 to 6 radial fibrovascular bundles.

3. A transverse section of the rhizome ex-

amined microscopically shows a thick bark with numerous oil cells, a wood with about 12 fibrovascular bundles and a large pith.

4. The powdered drug, examined microscopically shows simple or two to four compound starch grains 4 to 20 microns in diameter, and tracheæ with scalariform or reticulate thickenings, a few spiral.

5. When incinerated the drug should yield not more than 12 percent. of ash.

BARII PEROXIDUM.

Barium Dioxide. (Barium Peroxide.)

1. Commercial Barium Dioxide, containing not less than 20 percent. ($\text{BaO}_2=169.39$). It should be kept in well-closed vessels.

2. A heavy, grayish white or yellowish white powder, almost insoluble in water, with which it forms a hydrate having an alkaline reaction. Readily decomposed by diluted mineral acids with the production of hydrogen dioxide and the corresponding barium salt.

3. When heated to a bright red heat, Barium Dioxide fuses, loses oxygen, and is reduced to barium oxide.

4. A solution of 0.1 Gm. of Barium Dioxide in 5 Cc. of diluted hydrochloric acid yields a heavy white precipitate upon the addition of a few drops of diluted sulphuric acid (presence of barium).

5. Dissolve about 0.2 Gm. Barium Dioxide in 25 Cc. of water by the addition of 25 Cc. of diluted hydrochloric acid (1 in 5). Then add gradually from a burette tenth-normal potassium permanganate V. S. until a permanent pink color remains after agitation. Multiply the number of Cc. of tenth-normal potassium permanganate V. S. consumed by .00847 and divide the product by the weight of barium dioxide taken; the result, multiplied by 100 represents the percentage of pure barium dioxide present.

DRIED BLOOD ALBUMIN

Serum Albumin.

1. The dried serum of the blood of domestic animals, prepared by desiccation at a low temperature.

2. Yellow to brownish amber transparent or translucent hard and brittle scales or fragments; taste slightly saline; odor not more than that characteristic of blood; on igniting it emits an odor of burned animal matter.

3. It is insoluble in alcohol, chloroform or ether. Slowly and almost completely soluble

in water; the aqueous solution is levogyrate, the angle of rotation varying from 50° to 62° ; on heating the solution the albumin is coagulated and precipitated.

4. Upon incineration it should yield not more than 10 percent. of ash containing iron.

5. The aqueous solution (1 in 10) responds to the following tests; it is not readily precipitated by hydrochloric acid and the precipitate redissolves in excess of acid; it is only slowly precipitated by alcohol in excess; on shaking with an equal volume of ether the solution remains clear, without coagulation. (Difference from Egg Albumin.)

BRYONIA.

Bryony.

1. The dried root of *Bryonia alba* Linné, or of *Bryonia dioica*, Jacq. (Fam. Cucurbitaceae.)

2. Occurs usually in circular or elliptical slices, obtained by cutting the root more or less transversely, slices about 1.5 to 10 cm. broad and 3 to 12 mm. thick; the edges light gray or yellowish, rough and striate; the cut surface white or faintly yellow, showing a thin cortex and a wood with numerous projecting collateral fibro-vascular bundles arranged in concentric zones; fracture short and mealy, whitish internally; odor faint but distinct and characteristic; taste bitter and nauseous.

3. The powdered drug is light yellowish and when viewed with the microscope shows single rounded or two or more compound starch grains about 4 to 24 microns in diameter, frequently with a central cleft, tracheæ 35 to 60 microns wide reticulate or with bordered pores, and large yellow cork cells.

4. Upon the addition of sulphuric acid the powdered drug turns first reddish-brown and then purplish.

5. The drug should yield not more than 8 percent. of ash upon incineration.

CALAMINA PREPARATA.

Prepared Calamin. (Lapis Calaminaris.)

1. Native zinc carbonate containing a varying amount of zinc silicate, calcined at a moderate temperature; or artificial calcined zinc carbonate containing a small amount of ferric oxide.

2. A pinkish powder readily passing through a number 100 sieve, insoluble in water, soluble to a large extent in hydrochloric acid with some effervescence.

3. If 1 Gm. of prepared Calamin be digested for one hour on a water-bath with 25 Cc. of diluted hydrochloric acid, the loss by evaporation being replaced with water, the liquid filtered and the filtrate diluted to 100 Cc., 10 Cc. of this diluted filtrate, on addition of potassium iodide T. S., should show no precipitate within ten minutes (limit of lead); 10 Cc. portions of the diluted filtrate, when boiled with a few drops of nitric acid, then boiled with excess of ammonia water and filtered, should give (1) with hydrogen sulphide T. S. an abundant white precipitate (presence of zinc); (2) with excess of hydrochloric acid followed by potassium ferrocyanide T. S. an abundant yellowish-white precipitate (presence of zinc); (3) when diluted with 4 parts of water, slightly acidulated with acetic acid and treated with ammonium oxalate T. S., not more than a slight turbidity (limit of calcium); and (4) when slightly acidulated with hydrochloric acid, and treated with a few cubic centimeters of potassium sulphate T. S., should show not more than a slight turbidity at once (limit of soluble barium salts).

4. The residue insoluble in diluted hydrochloric acid obtained from 1 Gm. of prepared calamin, is fused with 5 parts of anhydrous sodium carbonate, the fused mass treated with water, the mixture filtered and washed, the insoluble portion dissolved in diluted hydrochloric acid and diluted to 100 Cc., 10 Cc. of this dilution should give no immediate turbidity with 2 Cc. of potassium sulphate T. S. (absence of barium sulphate).

CARMINUM.

Carmin.

1. The aluminum lake of the coloring obtained from cochineal. It should be kept in well-stoppered bottles, protected from light.

2. In irregular, angular, bright red masses or powder, without odor or taste. Upon burning, Carmin gives off the odor of burned feathers.

3. Insoluble in water, but completely soluble in ammonia water, forming a dark purplish solution.

4. On ignition, the ash obtained should not exceed 12 percent.

5. On fusing the ash with potassium cyanide, dissolving in concentrated hydrochloric acid and diluting with water, the solution should yield no precipitate with hydrogen

sulphide, nor with sulphuric acid (absence of tin, lead and barium compounds).

CASTANEA.

Chestnut Leaves.

1. The dried leaves of *Castanea dentata* (Marsh.) Borkh. (*Fam. Fagaceae*), collected in September or October, while still green, with which may be admixed not more than 5 percent. of twigs or other impurities.

2. Petioles stout, about 12 mm. long; blades entire or slightly broken and usually folded or matted together; about 15 to 25 cm. long and 5 cm. broad, oblong-lanceolate, the apex attenuate, acute at the base, coarsely and sharply serrate with ascending attenuate teeth, nearly smooth, coriaceous in texture, the upper surface dark green, the lower light green; distinctly pinnately veined, the veins of the first order diverging at angles of about 60°, each terminating in one of the teeth; odor slight; taste astringent.

3. The powdered drug under the microscope shows a few non-glandular hairs about .2 to .5 mm. long, nearly smooth, thick-walled, distinctly yellowish, occasionally in groups of three to eight and spreading from the base; numerous calcium oxalate crystals in rosette aggregates or in monoclinic prisms, 10 to 35 microns in diameter, occasionally in crystal fibers; parenchyma cells containing irregular yellowish-brown tannin masses which are colored blue with ammonio-ferric alum solution.

4. Upon incineration it should yield not more than 5 percent. of ash.

COCILLANA.

1. The dried bark of *Guarea Rusbyi* (Britton) Rusby (*Fam. Meliaceae*).

2. In flat or curved pieces of variable size and from 3 to 25 mm. thick; outer surface shallowly or deeply fissured, according to age and thickness, gray-brown, often ashy-gray from lichen growths, or of a deeper brown where the cork has been removed; inner surface of medium brown color, strongly and coarsely longitudinally striate, the striae straight or wavy; inner bark usually much thicker than the outer, its fracture coarse, splintery-fibrous; odor scarcely characteristic; taste slightly astringent, after chewing, peculiar and slightly nauseous.

COFFEA TOSTA.

Roasted Coffee.

1. The dried ripe seeds of *Coffea Arabica* (Linné) *Coffea Liberica* (Bull.) (*Fam. Rubiaceae*) and other species of *Coffea*, roasted until they develop a brown or blackish color and characteristic aroma.

2. The roasted seeds are oval, of variable size, longitudinally grooved upon the flat side and showing traces of the papery endocarp in the cleft. The color varies from a light yellowish brown to almost black, according to the degree to which the roasting process has been carried. The roasted seeds have a characteristic aromatic odor and a pleasant bitter taste. On ignition, roasted coffee should leave not less than 3 nor more than 5 percent. of ash.

3. If one gram of Roasted Coffee in fine powder be percolated with Ether until exhausted and the ethereal percolate evaporated to dryness, the residue should weigh not less than 0.1 gram (presence of at least 10 percent. fat).

4. If one gram of roasted coffee be boiled with 10 Cc. of distilled water, filtered, the filtrate acidified with 1 Cc. dilute Sulphuric Acid and then decolorized by cautious addition of Potassium Permanganate T. S., the decolorized solution should show no blue coloration on addition of iodine T. S. (absence of starch).

5. If roasted coffee berries be shaken for one minute with cold water or alcohol and the berries removed by straining, the separated liquids should show no colored or heavy deposit nor should any color be imparted to the alcohol (absence of colored and mineral facings).

6. For pharmaceutical purposes, a coffee should be selected which has been roasted to a chestnut brown color and which when assayed by the process given under "Thea," yields not less than 1 percent. of caffeine.

(To be continued.)

THE GIFT OF MAKING FRIENDS.

"The man who hails you Tom or Jack,
And proves by thumping on your back
His sense of your great merit,
Is such a friend that one had need,
Be very much his friend indeed
To pardon or to bear it."—*Cowper*.

Report on the Progress of Pharmacy

For the Year 1912

(Eighth Installment.)

Abies Pectinata: Volatile Oil of the Seeds.—The receipt of a small parcel of seed from *Abies pectinata* afforded Schimmel & Co. an opportunity of distilling the volatile oil from them direct, whereas ordinarily the seed is worked up together with the cones. As the cones owe their oil principally to the enclosed seeds, it was to be expected that the oil yield from the seed alone would be very high and that the distillate would agree completely in characters with the ordinary oil from the cones, and these anticipations were confirmed; but it was necessary to crush the seeds before placing them in the still, since the uncrushed seeds yielded only 2.3 per cent of oil, whereas the crushed seeds yielded from 12 to 13 per cent. As expected, the constants were those of the oil from cones, ranging within the following limits: Sp. Gr. 15°, 0.8629 to 0.8668; opt. rot., $-68^{\circ} 14'$ to $-76^{\circ} 38'$; refr. index 20°, 1.47636 to 1.47812; acid val. 0.5 to 1.8; ester val. 0.9 to 3.7, corresponding to 0.3 to 1.3 percent bornylacetate; soluble in 5 to 7 vols. and more of 90 percent alcohol.—Schimmel's Rep., October, 1912; 04.

Agave Fibre: Conversion into Imitation Horse Hair.—A patent has been taken out in France for the preparation of imitation horse hair from "esparto" or cleaned agave. It is obtained by digesting 100 kilos of this material for six hours under a pressure of three atmospheres, with a solution consisting of 23 litres of caustic soda of 36°B. and 1500 litres of water. After rinsing the fibres are steeped for fifteen minutes in a bath containing 1 liter of sulphuric acid per 100 liters of water; they are then washed, dried, and put through a carding machine. The "hair" may be bleached by means of a solution of bleaching powder (6 gm. per liter); while curly fibres are obtained by steeping the degummed fibres in a solution of caustic soda at 18°B for about an hour.—Pharm. Journ. and Pharmacist, July 27, 1912, 111; from Journ. Soc. Chem. Ind., April 30, 1912, 381.

Natal Aloes: Homonataloin a Constituent and its Constitution.—Klaverness having been unable to find E. Leger's homonataloin in Natal aloes, the latter has reinvestigated the subject, with results that confirm the occurrence of at least two aloins, one of them being homonataloin, the other nataloin. The crude aloins obtained by macerating the aloes (of known origin) in acetone or in 90 per cent alcohol, were separated by fractional crystallization from 60 percent alcohol, the least soluble of the two in that solvent being homonataloin. Yielding arabinose-*d* on hydrolyzation with acid, it would seem probable that homonataloin is a condensation product of this sugar with nataloemodin, but the combustion results do not support this theory. It can be positively stated, however, that the nataloins contain a methylantraquinone or else nataloemodin and arabinose-*d*, and that the molecule is very unstable.—Journ. de Pharm. et Chim., 1912, 6, 241.

Camphor: Cultivation and Preparation.—In view of numerous inquiries of planters regarding the cultivation of camphor, the government of the Federated Malay States has published a treatise by B. J. Eaton, in which the author preliminarily describes the different varieties of camphor, including ordinary camphor from *Cinnamomum Camphora* (the Japanese camphor tree), Borneo camphor from *Dryobalanops aromatica*, and N'gai camphor, from *Blumea balsamifera*; then describes the geographical distribution of the camphor tree and its cultivation in foreign countries, and follows this with an account of the experiments and results obtained in the Malay States. These were first made in 1904 at Batu-Tiga, Selanor, with seed obtained from Yokohama for this purpose. The plants flourished excellently, and in 1909 the first camphor was distilled from the shoots of the five-year-old trees, yielding 1.17 to 1.22 per cent from cut leaves, 1.25 to 1.47 from mouldy leaves, and 0.06 to 0.45 percent from small

stems—the distillate consisting in each case of camphor with very little oil. Repeating the experiment upon a larger scale with parts of an entire tree, the yields were: from leaves, 1 percent; from stems under one-half inch diameter, 0.22 percent; from stems over one-half inch diameter, 0.61 percent; and from roots, 1.10 percent—the latter alone yielding an oil which possessed an odor reminding at the same time of camphor and of lemon. Finally the author gives a review of similar experiments in other countries (Ceylon, India, Germ. E. Africa, Jamaica, West Indies, Italy and America), the results, with the authority, being shown in a table accompanying his treatise.—Schimmel's Rep., Oct., 1912, 28-29; from Bull. No. 15, Dep. of Agricult., Febr., 1912.

Camphor: Distillation from Leaves in Java.—A. W. K. de Jong reports the result of distillation of camphor leaves in Java. From 3560 kilos of green (?) leaves he obtained 31.15 kilos of camphor and 14.1 liters of oil, while 376 kilos of branches (probably without leaves) only yielded a trace of oil. The distillation was conducted with steam of 3 to 5 atmospheres. This was passed through a galvanized iron case, enclosing three cylindrical cooling vessels filled with water, the floor and walls of the case being also washed by cooling water. In the floor of the case was a cock for drawing off the water of condensation. When the distillation was concluded, the cooling vessels were removed from the case and the camphor which had been distilled out was collected.—Schimmel's Rep., October, 1912, 29; from *Teysmannia*, 1912, No. 2, 125.

Digitalis Leaves: Precaution against Immature Collection.—Caesar and Loretz, referring to the fact that digitalis leaves collected too early in the season possess only half the activity of the leaves from mature plants, state that in consideration of this fact, as well as of the damage to the plants by this immature collection, the forestry authorities in the Harz district have prohibited the collection of the drug before the beginning of July and after the end of September.—*Pharm. Ztg.* LVII (1912), No. 84,845.

Mustard Seed: Advantageous Method of Estimating the Volatile Oil.—D. Raquet's investigations go to establish the advantage of alcoholic over aqueous maceration in determinations of the volatile oil in mustard seed. Into a 250 cc. flask he placed 5 gm. of the

powdered seed with 100 cc. of water and 20 cc. of 90 per cent alcohol. The flask is closed and heated during one hour to a temperature of 30°-35°, or it is allowed to stand for 6 hours with frequent shaking. Distillation is then effected from a glycerin-bath, the distillate being collected in a 100 cc. flask, containing 10 cc. of ammonia of sp. gr. 15°, 0.925, until about 50 cc. has distilled over. The distillate is then diluted with 20 cc. of N/10 silver nitrate solution and, after shaking, the distillation is continued to the 100 cc. mark. The distillate is now heated under a reflux condenser at 80°-85° for one hour, allowed to cool, adjusted to 100 cc., and filtered through chlorine-free paper. Of this filtrate, 50 cc. is titrated as usual with N/10 ammonium sulpho-cyanide solution. If N = the number of cc. used, and $10-N$ = the number of cc. of N-10 silver solution, then $(10-N) P. 198$ = the quantity of Allyl-isosulphocyanate yielded by 100 gm. of the mustard seed. By this method, English mustard seed was found to contain 1.386 percent; Greek, 1.198 percent; mustard seed from Merville, 1.08 percent; Sicilian, 0.99 percent; Bari mustard seed, 0.99 percent, and Bombay mustard seed, 0.81 percent of allyl-isosulphocyanate.—Schimmel's Rep., Oct., 1912, 1w; from *Ann. Chim. analyt., Appl.* 17 (1912), 174, through *Chem. Zentralbl.*, 1912, 457.

In lieu of the usual methods used in the determination of allyl-isosulphocyanate in preparations of mustard, which he rejects, H. Péneau proposes either to weigh in the form of silver chloride the silver which has entered into the reaction, or to titrate it with decinormal silver solution after adding an excess of cyanide of potash.—*Ibid.*, from *Journ. de Pharm. et Chem.* VII 6 (1912), 160.

Dalmatian and Montenegrin Insect Powder.—At the October session (1912) of the German Pharmaceutical Society, Juttner gave an interesting description of a journey to Dalmatia and Montenegro, undertaken with the object of studying the methods of collecting the flowers and of preparing insect powder from them. He states that the flowers are collected from wild-growing plants, *Crysanthemum cinerariifolium*, in large territories along the Dalmatian coast, and particularly on the small adjacent islands in the Adriatic, partly in small and partly in large quantities. No effort is made to cultivate the plants, except that now and then, to promote the growth of new plants, some com-

nited flowers are spread out in localities where wild-growing plants have their habitat. The collectors dispose of the fresh flowers to the dealers, who sun-dry them on mats spread out along the shore of the ocean, and then reduce them to powder for shipment—the principal market for the Dalmatian insect powder being Spalato, and the best quality that prepared from flowers grown on the small Adriatic islands. That grown on the mainland is mostly inferior in quality, while

Montenegrin Insect Powder, which is produced in a limited extent only, has been proven to be of little value, notwithstanding the praise which has often been accorded to it. Both kinds of insect powder are exceedingly liable to be adulterated, the principal adulterant being the stems of the plants, which are ground, colored with chrome-yellow, and aromatized with powdered pepper.—*Pharm. Ztg.*, LVII (1912), No. 81,817.

Complementary to the above, Dr. P. Siedler called attention to the adulterants of insect powder and the method of their detection, as well as for the valuation of the genuine drug.—*Ibid.* 817.

Fresh Valerian: Therapeutic Value.—J. Chevalier observes that the disrepute into which valerian has fallen as a nervous sedative is due entirely to the use of the dried drug. This is practically inert. But the fresh juice of the rhizome is a most valuable preparation. It may be given in doses of one to three teaspoonfuls, either alone or flavored. Since it contains no free valerianic acid, the taste is not disagreeable. For this reason the strong mother tincture, or alcoholature of French pharmacy, has been both the most palatable and effective preparation of valerian, but it contains so much alcohol that its use is impossible in the majority of cases in which the sedative effects of valerian are required. A specially prepared juice, obtained from the roots of cultivated valerian, has been introduced under the name of

Energetone of Valerian. This, being prepared without heat and preserved without alcohol, is claimed to represent the natural fresh juice of the plant. Pouchet and Chevalier have found this preparation to be satisfactory. Pouchet has stated that any preparation of valerian which has a strong odor of valerianic acid should be regarded therapeutically inactive. This acid is in itself quite devoid of therapeutic action. Even its salts, such as ammonium valerinate, have no action, apart

from the stimulant action of the ammonium. The other valerianates act solely in a propulsive and psychic manner, chiefly on account of their repulsive odor and the preconceived ideas held as to their action. Valerian juice, on the other hand, has a very powerful sedative and antispasmodic action, and, at the same time, is a cardiac tonic, so that it appears to be simultaneously a stimulant and sedative. For young children it is the safest and best hypnotic. As the juice of valerian is quite non-toxic, it may be safely prescribed as a general nervous sedative.—*Nouv. Remèdes*, 29 (1912), 169.

Distilled Water: Advantageous Use in Perfumery.—The "Seifenfabrikant" calls attention to the persistent use by some perfumers of ordinary tap or well water in the manufacture of perfumery, and discusses some of the advantages accruing from the use of distilled water. Thus, for example, the addition of ordinary water to alcoholic solutions of volatile oils may, and often does, produce turbidity which is difficult to remove by filtration, while the same quantity of distilled water would at once produce clear solution, or, at most, easily removable turbidity. Moreover, the impurities in ordinary water unfavorably affect the delicate odor of many perfumes, which distilled water does not. Other products, such as cosmetics, transparent soaps, etc., are similarly affected by impurities in water, and can be avoided by the use of distilled water, which is modernly so easily obtainable that there is no reason why it should not be used in the preparation of perfumery of every description in which water is required.—*Pharm. Ztg.*, LVII (1912), No. 86, 861.

Australian Eucalypts: Yield and Character of New Oils.—R. T. Baker and H. G. Smith have described a number of new eucalyptus oils, distilled by them from the leaves of different Australian Eucalypts:

Eucalyptus acaciiformis, Deane et Maiden, known as "red" or "narrow leaved peppermint," yielded 0.197 percent of a brown oil, having a turpentine-like odor, and consisting principally of *d*-pinene?

Eucalyptus Andrefesi, J. H. Maiden, yielded 1.27 percent of a lemon yellow oil, consisting principally of *l*-phellandrene, and containing scarcely a trace of cineol.

Eucalyptus Campanulata, Baker et Smith, yielded 0.8519 percent of a pale yellow oil, containing phellandrene as principal constitu-

ent, with some cineol, piperitone, and eudesmol.

Eucalyptus Bridgesiana, yielded 0.73 to 0.745 percent of oil, containing from 73 to 78 percent of cineol.

Eucalyptus Lycopinea, yielded an oil which did not contain above 5 percent of cineol.

Eucalyptus deatropinea, yielded 1.02 percent of crude oil, which on rectification became nearly colorless. The crude oil contains 3.7 percent of geranyl acetate.

Eucalyptus nova-anglica, yielded an oil containing a sesquiterpene in considerable proportions, with a very small cineol content, and occasionally small quantities of phellandrene.

Parts IV and V of the second volume of the work "A Critical Revision of the Genus *Eucalyptus*," edited by J. H. Maiden, has also appeared, and a number of species are mentioned by title in the abstract, from which the preceding is quoted in Schimmel's Rep., October, 1912, 63-64; from Journ. and Proc. Royal Soc. of N. S. W., 45:267.

Australian Melaleuca Oils: Cajuput Oil Not a Typical Representative.—In continuation of their investigations of the Australian *Melaleuca*-species, R. E. Baker and H. G. Smith have discovered that cajuput oil (from *Melaleuca Leucadendron*, L.) is not a typical representation of the *Melaleuca* oils, as is shown in the following oils, which deviate considerably from cajuput oil in their constitution:

Oil of Melaleuca genistifolia, Sm., obtained from leaves and terminal branchlets in a yield of 0.526 percent, was pale yellow and had a well defined odor of turpentine; sp. gr. 15°, 0.8867; opt. rot., 32.7°; refr. index, 22°, 1.4702; sap. val., 6.8; insoluble in 10 vols. 80 percent alcohol. Contains from 80 to 90 percent of pinene, and only 2 percent of cineol.

Oil of Melaleuca gibbosa, Labill., obtained from leaves and terminal branchlets in a yield of 0.158 percent, was deep yellow and had an odor of cineol and pinene; sp. gr. 15°, 0.9138; opt. rot., 1.5°; refr. index, 20°, 1.4703; sap. val., 9.9; insol. in 10 vol. of 70 percent alcohol, but soluble in its own vol. of 80 percent alcohol. Contains 61.5 percent of cineol, some *α-pinene*, a sesquiterpene and perhaps also terpinyl acetate.

Oil of Melaleuca pauciflora, Furecz., obtained from leaves and terminal branchlets in

a yield of 0.3 percent, was of a dark amber color and had a somewhat viscous consistency; sp. gr., 15°, 0.9302; opt. rot., 3.4°; refr. index, 21°, 1.4921; sap. val., 8.45; barely soluble in 10 vols. of 80 percent alcohol. Contains only 8.7 percent of cineol, the principal constituent being a sesquiterpene, which appears to occur in the high boiling fractions of many *melaleuca* oils. The oil may contain limonene or dipentene, possibly also terpinyl acetate as well as about 5 percent of free terpineol.—Journ. and Proc. Royal Soc. of N. S. W. 45 (1911), 365.

Cedarwood Oil: Chemistry.—In continuation of his researches on cedarwood, F. W. Semmler, in conjunction with E. W. Mayer, has discovered a new primary sesquiterpene alcohol ($C_{15}H_{26}O$), which he has named *cedrenol*. This alcohol stands in the same relation towards cedren ($C_{15}H_{24}$) as do the two primary alcohols of the santalol series towards the santalenes ($C_{15}H_{24}$), and as myrtanol and the ginger grass alcohol stand towards pinene and limonene. When purified from primarily produced acetate, cedrenol has the following properties: Boiling point (9.5 mm.), 166° to 169°; sp. gr., 20°, 1.0084; opt. rot., 20.0°; refr. index, 20°, 1.5212. The primary CH_2OH group in the cedrenol molecule occupies the same position which is occupied by the CH_3 group in cedrene and in solid *cedrol* ($C_{15}H_{26}O$). In addition to cedrenol, the authors have observed in cedar oil a saturated alcohol, *pseudo-cedrol* ($C_{15}H_{26}O$), which, while chemically identical with cedrol, differs from it physically. *Pseudo-cedrol* boils between 147° and 152° and constitutes a viscous oil with the following constants: Sp. gr., 20°, 0.9961; opt. rot., 20°, 21.5°; refr. index, 20°, 1.5131.—Berl. Berichte 45 (1912), 786 and 1384.

Geraniol: Direct Estimation in Citronella Oil.—In the "Perfumery and Essential Oil Record," May, 1912, a method for the direct estimation of geraniol in citronella oil is suggested as follows: Ten gm. of hydroxylamine hydrochloride is dissolved in 25 cc. of water; 10 gm. of potassium carbonate separately dissolved in 25 cc. of water is added and the mixture filtered. With this solution 10 gm. of the oil is thoroughly shaken for two hours at 15-18°C. The oil is then separated, dried by means of anhydrous sodium sulphate, and acetylated with twice its volume of acetic anhydride in the usual way for one and one half hours on a sand bath under a

reflux condenser. The oil is washed, dried, and neutralized, and a weighed quantity (about 2 gm.) is saponified with alcoholic potash. The calculation is made by the usual formula.—Pharm. Jour. and Pharmacist, June 1, 1912, 732.

Jasmine: Cultivation and Yield of Oil.—A condensed account of the history and cultivation of jasmine is given in the "Perfumery and Essential Oil Record," May, 1912. Under the most favorable conditions 1,000 kilos of bloom yield 4 kilos of concrete essence, or 2 kilos of liquid essence. Frost is one of the great enemies of the delicate crop, and the caterpillar also requires constant attention. Artificial jasmine essence has actually improved the sale of the genuine product, partly because the synthetic article needs a certain amount of the natural oil to give it character—partly also, it is hinted, because it helps the grower to tide over a period of scarcity.—Pharm. Journ. and Pharmacist, June 1, 1912, 732.

"Lavandin": An Undesirable Lavender-Hybrid.—L. Lamothe calls attention to the increasing cultivation and utilization of a lavender-hybrid:

Lavandula fragrans latifolia, Chartenier—the result of a crossing of lavender and spike, which is known in Southern France by the name of "Lavandin," and also by several others, such as "Lavande Batarde," "Grosse Lavande," "Badasse," etc. It occurs principally in the region of the "hohn-oak," even spreading over the boundaries of the latter, traversing in a broad belt the departments of Drome, Vaucluse, Basses-Alpes, etc., where it covers the southern slopes of several mountains up to the top. Like all hybrids, "lavandin" is an extraordinarily hardy plant, and in its prolific development constitutes an actual danger to the true lavender, which it robs of air and nourishment. On account of its acrid odor and bitter taste, pasturing sheep and goats shun it, while they find in the true lavender an occasionally welcome substitute for grass; but in spite of this, very considerable quantities of this hybrid are cut for distilling, and Lamothe estimates that the "Lavandin Oil" brought to market every year amounts to about 12,000 kilos, or to about 20 percent of the total output of lavender oil. It is interesting to note also that the same time and trouble that is required to collect 55 kilos of true lavender flowers, suffices to collect 400 kilos of "lavandin flowers," which, moreover,

yield 1 kilo of oil from 77 to 80 kilos of flowers, whereas 145 kilos of true lavender flowers are required for 1 kilo of oil. As regards the quality, this can be judged from the fact that the average ester content of "Lavandin Oil" is 24 percent, whereas a linalyl acetate content of 30 percent is considered low for true lavender oil.—Schimmel's Rep., April, 1912, 86-88; from *Perfumerie Moderne*, 5 (1912), 9.

Spike Lavender Oils: Solubility in 60 percent Alcohol.—According to private information to Schimmel & Co. it has been observed that the degree of solubility of spike oil varies with the origin of the material. Oils from the Alps and from Provence are said to be soluble in 60% alcohol, while the distillates from the Department of the Bouches-du-Rhone, Vaucluse, Gard, Hérault, and Aude, are said to be only rarely soluble in 60% alcohol. The differences are said to be due to variations in the conditions of the soil and the climate, and also to the method of distilling, distillation being often carried out without water and cooling. The matter is further complicated by the circumstance that, in order to increase the weight, the herb-cutters often mix other plants with the spike, such as *Saturja montana*, L., *Calamintha officinalis*, Moench, *Sideratis romana*, L., *Teucrium Polium*, L., etc., which, when the admixture is moderate, it is very difficult to pick out. With the object of checking the accuracy of these statements, Schimmel & Co. therefore secured through a business friend a collection of spike oils from various departments for examination, the results of which are shown in a table, including five distillates from different localities in the Basses-Alpes, and one each from Vaucluse, Bouches-du-Rhone, and Drôme. The results do not confirm the assertion that the degree of solubility depends upon the origin of the oil; on the contrary, generally speaking, all the oils are soluble in the same degree, and deviations occur independently of the locality of the production. Three of the oils from the Alps, dissolved in 6 vols. and more of 60% alcohol, one in 7 vols., and the fifth in 20 vols. The other oils in the order mentioned, dissolved in 7, 7.5 and 14 vols. and more of 60% alcohol. The inference is plain that any solubility differences in spike oil must be attributed to methods of distillation and greater or less care in collection of material.—Schimmel's Rep., April, 1912, 118.

Oil of Lemon: Novel Method of Valuation.—Lemon oil consists principally of terpenes and sesquiterpenes, which are of slight importance so far as the odor of the oil is concerned, and are practically insoluble in 80 percent. alcohol, whereas, the valuable odoriferous constituents are readily soluble in the same alcohol. This forms an excellent criterion for the valuation of the lemon oil, which G. Patané applies in two different manipulations. The first consists in shaking up at exactly 20° in a test tube of 10 cc. capacity, graduated to 0.1 cc., equal quantities (volumes?) of oil and of alcohol of a given strength. When the mixture has completely separated, the degree of increase of the alcohol layer is read off. The second method consists in mixing equal quantities of oil and of the alcohol in the test tube and warming them until complete solution is effected. The mixture is then allowed to cool, constantly stirring with a thermometer, graduated to 1/10th degrees, until clouding ensues, and noting the point. Differences of 1/10th degree are sufficient to cause clouding. All oils which have the same clouding-temperature show the same conditions of solubility in the first test, so that it becomes possible to draw up a comparative scale of clouding-temperature and solubility. The addition of 10 percent. of terpenes increases the clouding temperature one degree, 20 percent. two degrees, and so on. Great care must be taken with the alcohol used for the test, because so slight a difference as 1/10th of a degree suffices to alter the clouding-temperature of the alcohol.—Schimmel's Rep., October, 1912, 61.

Burmese Lemongrass Oil: Soluble and Insoluble Variety.—It has been reported that a sample of lemongrass oil distilled from cultivated grass at Moulmein, in British Burmah, although containing a very high percentage of citral (over 82 percent.), was of the insoluble variety. Further experiments have been made in connection with the cultivation of the red-stem and the white-stem grass, *Cymbopogon flexuosus* and *C. citrus*, respectively, the latter yielding the oil referred to. A sample of oil distilled from this variety occurred in lower percentage, but was readily soluble in three volumes of 70 percent alcohol. The difference is not easily accounted for, but it seems that it is not possible to differentiate between the two varieties of *Cymbopogon*, and to lay down on hard-and-

fast lines that the one yields a soluble and the other an insoluble oil.—Pharm. Jour. and Pharmacist, June 1, 1912, 732; from Perf. and Ess. Oil Rec., May, 1912.

Linaloe Oil: Linalool Monoxide a Constituent from Mexican and Cayenne Linaloe Distillates.—In the course of examination of the oils distilled from Mexican and also from Cayenne linaloe wood, in 1908, Schimmel & Co. isolated a body having the formula $C_{10}H_{18}O_2$, which they set down as an oxide of linalool. In 1810, N. Prileschaeff, engaged in the investigation of the oxidation products of unsaturated compounds, mentioned among others a linalool monoxide, which Schimmel & Co. were able to show was identical with the oxide $C_{10}H_{18}O_2$ previously isolated by them. To confirm their previously expressed opinion, they have now prepared the monoxide by Prileschaeff's method, and find the two bodies to be identical. The body is somewhat viscous and is clearly differentiated from linalool by its mouldy odor, which they account for as the result of a gentle oxidation possibly favored by the moist climate of the tropics in its effect upon the wood.—Schimmel's Rep., October, 1912, 78-80.

Nigella Oil: Synthesis of its Alkaloidal Constituents—Damascenine.—The beautiful blue fluorescence of the oil of *Nigella damascena*, L., is due to the presence of an alkaloid, damascenine, which A. J. Ewins has recently shown can be prepared synthetically (see damascenine under "Organic Bases"). Since then the author has described the results of his investigation in greater detail, the synthetic process consisting in the conversion of *m*-hydroxybenzoic acid, into methoxybenzoic acid, this into a nitro-derivative, reducing this to aminomethoxybenzoic acid, and converting this to the hydriodide and finally into the hydrochloride of methylamino methoxybenzoic acid, which is identical with the hydrochloride of damasceninic acid. From this the conversion into damascenine results by treatment in a well-known manner. The further result of the investigation has shown that the formula $C_{15}H_{15}NO$, assigned to damascenine by Pommerhne (1900) is incorrect, while the formula $C_{16}H_{15}NO$, assumed by Schneider (1899), almost corresponds with the actuality. Furthermore, that the so-called "methyl-damascenine" which has been isolated from the seed of *Nigella aris-tata* by Pommerhne and Keller (1908) is

identical with damascenine.—Journ. Chem. Soc., 101 (1912), 544.

Bulgarian Rose Oil: Present-day Primitive Method of Production.—Dr. P. Siedler, in an address delivered at the October session (1912) of the German Pharmaceutical Society, after giving an interesting account of his journey through the Bulgarian "rose-land" and description of the cultivation and gardening of the red and white roses used exclusively for the production of the Bulgarian Oil of Rose, describes the method of distillation which, with a few more modern exceptions, is mostly carried out in the old, somewhat primitive manner. According to this method, 60 kgm. of hot water and 12 kgm. of rose petals are introduced into the still, and 12 liters of distillate are collected, and from this 2 liters are then distilled and set aside, when upon standing the rose oil separates and is removed from the surface. The yield is very variable and depends on a variety of conditions; in general about 1 kgm. of rose oil is obtained from 1000 kgm. of rose petals—the best oil and most abundant yield being obtained from the red roses; but the white roses will flourish in localities that are unsuitable for red roses, and the rose oil produced in Bulgaria is therefore mostly a mixture of the two varieties of oils. As has been noted by others, the author mentions that the adulteration of the oil during its production is frequently practiced, the principal adulteration being palmarosa oil, geranium oil, spermaceti, paraffin, alcohol, etc.—Pharm. Ztg., LVII (1912), No. 81, 818.

Chinese Wood Oil: Standardization by Means of the Heat Test.—The Berlin Produce Exchange Committee on Fats and Oils proposes the following temporary standards for Chinese wood oil:

Wood Oil from Hankow and Shanghai shall be regarded as of good merchantable quality if, after being heated to from 282° to 293° C., it sets hard in six to six and a half minutes, can be cut dry, and is firm in consistence without being sticky or altered in color.

Wood Oil from Canton or Hong Kong should become hard in four and a half to five and a half minutes. The question of purity is left out of consideration; but if so-called pure oil takes longer than the periods mentioned to become hard, the purity must be ascertained by other tests.—Oil and Col. Trades Journ., July, 1912, 136.

Chinese Wood Oil: Value and Method of Carrying Out the Heat Test.—Frank Browne, Government Analyst, Hong Kong, observes that the quality of Chinese Wood Oil is determined to a large extent by its well-known characteristic property of forming a jelly when heated to and maintained at a temperature of 250° C. for a few minutes, but that different observers usually employ different temperatures, so that results are not easily comparable. In view of the large and increasing export of this oil, it seems very desirable to arrange a heat test which can be repeated by both buyer and seller in any part of the world, and with this object he has devised a method which insures that the heating is carried out in an identical manner, describing the apparatus necessary as well as the process itself in detail. Employing a temperature which is maintained as close as possible at 282° C. (540° F.) he obtained concordant results when operating on seven samples of pure oils in conformity with the details described by him, these showing that the times of setting varied from eleven to thirteen minutes. For a wood oil containing 10% of adulterant, the time varied from thirteen to fifteen minutes, and with 20% of adulterant from sixteen and a half to nineteen minutes. The results, which are given in detail in several tables, show that a heat test carefully applied is of considerable help in ascertaining quality. If the time required does not exceed twelve and a half minutes the oil is in all probability genuine; if more time is required further examination is desirable.—Chem. News, July 12, '12, 14-15.

"Hardened" Oils: Production and Characters.—Dr. Aufrecht gives some interesting information concerning the physical and chemical properties of "hardened" oils, about which little has appeared in the literature. These products, which promise to become of importance in the soap and food industry, and have also attracted some attention in the manufacture of pharmaceuticals and cosmetics, are obtained under patented processes, depending on the action of hydrogen upon different oils, such as rape, sesame, arachis, cotton, ricinus, and train oils, in the presence of a catalyst, such as nickel, colloidal palladium, or palladium chloride, or in the absence of catalysts, by passing a continuous current of hydrogen and oil through a perforated centrifuging drum. Under these treatments, aided in some cases by heat (150°-

180°), in others conducted at the ordinary temperature, the unsaturated acids of the oils (animal or vegetable), are converted into saturated fatty acids, in accordance with the equation $C_{15}H_{31}O_2 \rightarrow 2H \equiv C_{15}H_{29}O_2$, and present in general the following characters:

They possess great hardness, have a granular structure, and, according to the particular method, are either yellowish or pure white. They have no marked odor, but when heated to melting manifest a peculiar pyrogenous odor. The taste is unpleasant, reminding of rancid tallow. They are readily soluble at the ordinary temperature in ether, chloroform, carbon tetrachloride, benzoin, petroleum, and carbon disulphide, but only sparingly soluble in alcohol and methylalcohol. The specific gravity ranges from 0.9252-0.9268 at 15° C., and the melting point from 41.5° to 46.5° C.; in fact there is a close agreement in the constants of the "hardened" oils (also known as "Duotol") obtained from different sources as shown in a table giving the results obtained by the author with yellow and white "duotol" and with "hardened train oil."—*Pharm. Zig., LVII* (1912), No. 87, 876-877.

Emulsin: Synthetizing and Hydrolyzing Action.—Continuing their investigation of the synthetizing action of emulsin, E. Bourquelot and M. Bridel find that the ferment is capable of bringing about the direct combination of ethyl alcohol and glucose. When emulsin was constantly agitated in alcohol (85 percent) in presence of glucose for twenty days in a mechanical agitator so that fresh particles of the ferment were constantly brought into contact with the solution, as much as 77.8 percent of the glucose was converted into *B-ethyl-glucoside*. Further experiments show that this can be converted into the stereoisomer *A-ethyl-glucoside*, by action of hydrochloric acid. A similar combination takes place with other alcohols and glucosides in presence of emulsin. Glucosides of methyl, propyl, isopropylbutyl, and isobutyl alcohols, have been obtained, and these compounds are again hydrolyzed by emulsin in aqueous solution.—*Journ. de Pharm. et Chem.*, 1912, 6, 13.

Rennet: Action on Milk.—In the manufacture of Cheddar cheese, retardation of the time of coagulation has often been remarked, notwithstanding the activity had been of the required degree before the addition of the rennet to the milk. The investigations of M. Nierenstein and J. Stubbs show that the activity of the milk is not due entirely to lactic

acid, but partly to some product originating from caseinogen, and that though this is stimulated by the addition of lactic acid, pure lactic acid is of no use as a starter. Furthermore, the authors find the retardation of the time of coagulation with rennet is not entirely dependent on the calcium salts.—*Journ. Soc. Chem. Ind.*, July 15, 1912, 657.

Thyroid Glands: Iodine Content.—N. H. Martin reports the results of a long series of determinations of the iodine content of thyroid gland which has been carried out during the past year by his principal chemist, Mr. Binks. These results are exhibited in a table giving the dates, numbers, weight of fresh lobes (average and total), weight of dried thyroid, average yield, iodine in the dry and the fresh thyroid and the average iodine per lobe—over 6500 lobes having been used in the course of these determinations, and the figures in each estimation being based on the bulked product of some hundreds. This is regarded a very important point, as the iodine content of thyroidum siccum from single glands varies more than the milk obtained from individual cows, and it is obviously as inadvisable to talk of fixing a standard from assays of a few glands as to fix a milk standard from analysis of milk obtained from a few animals instead of from herds. The B. P. does not include limitation figures for size of glands, but "hypertrophied or otherwise abnormal" glands are directed to be rejected. It is difficult to see how the average pharmacist can be expected to discriminate. Sheep's thyroids vary in size, but anything between 1 in. and 2 in. in length may be said to be usual. Frequently glands are met with which greatly exceed these proportions, though apparently of healthy enough tissue. Such lobes were always discarded, but the following figures are of interest:

Wt. of Lobe Grams	Wt. of Dry Thyroid Obtained Grams	Iodine in Dry Thyroid %	Iodine per Lobe Gram
12.0	2.8	0.22	0.00616
14.0	3.3	0.20	0.00660
32.5	7.5	0.08	0.00600

It is noteworthy that while large lobes contain much more iodine than usual, it is not proportionate to their increased weight, and the percentage of iodine in the dried substance is reduced. The author states that the iodine in

Liquor Thyroides, B. P., varies from 0.01 to 0.03 gm. per 100 cc., but that apparently only half the iodine in the glands is extracted.—Trans. Brit. Pharm. Conf., 1912, through Chem. and Drug., August 3, 1912, 200.

"Rice-Polishings": A Remedy for Beri-Beri.—In a paper on the prevention and cure of beri-beri, reference is made to the fact that rice is rendered harmful by the milling and polishing process to which it is subjected, resulting in the removal from the grain of some substance of high physiological importance, the absence of which results in the production of polyneuritis in fowls and of beri-beri in man when a dish is consumed of which polished rice is the staple. Drs. H. Frazer and A. T. Stanton observe that an attempt has been made to prepare a remedial agent from these polishings, since good results have been seen in cases treated by extracts prepared from the polishings. It has been found that the active substance is soluble in water and in 91 percent. alcohol, the latter solution retaining its activity for months. Accordingly an

Extract of "Rice Polishings" (more properly designated a fluid or liquid extract! Rep.), was prepared as follows: Sifted polishings were freed from fat by percolation with petroleum ether, and dried in the air; then 1 part of the fat-free material was macerated for a week in 4 parts of 94 percent alcohol acidulated with 0.3 percent of hydrochloric acid, filtered, the filtrate nearly neutralized with sodium carbonate, again filtered, and the filtrate concentrated to a small volume under reduced pressure, at 60° C. A little water was added, and residual fat removed with petroleum ether; whereupon the new fat-free product was concentrated to near dryness (below 60° C.), and the residue dissolved in water and alcohol in such proportion that the final product contained 50 percent of alcohol and 1 cc. represented 10 grammes of the fat-free polishings. With this extract the curative and prophylactic properties of the "rice-polishings" was proved.—Pharm. Journ. and Pharmacist, October 26, 1912, 519; from Lancet, October 12, 1912, 1005.

Yeast: Presence of an Alkaline Curative Substance which Prevents Polyneuritis.—It has previously been shown by C. Funk that "rice-polishings" contain a substance which prevents polyneuritis, and this substance has been isolated in a more or less pure crystal-

line state, the provisional formula $C_{17}H_{20}N_2O_7$ being attributed to it. The author has since examined yeast, which is known to possess similar curative action, and has isolated from it the same substance, to which he has given the name

Vitamine.—It is, however, accompanied by pyrimidine bases and other substances, to eliminate which hydrolysis and fractional precipitation are necessary; consequently the yield of pure vitamine is very minute. Nevertheless, vitamine is undoubtedly the sole curative agent in yeast, and in "rice-polishings," and a large number of cures of pigeons affected with polyneuritis have followed the administration of 2 to 4 centigrammes. Vitamine probably belongs to the pyrimidine group; the aqueous solution of the base is neutral and does not react with acids. When recrystallized from diluted alcohol it melts at 233° C.—Brit. Med. Journ., 1912, 2, 787.

Alcoholic Extract of Yeast: Curative Effect in the Treatment of Beri-Beri and Polyneuritis.—It is stated by E. S. Edie, W. H. Evans, and others, discussing the curative treatment of beri-beri and polyneuritis, that an alcoholic extract of ordinary yeast, after the removal of the alcohol at a low temperature, is extremely active in curing the convulsions and lameness of birds suffering from polyneuritis. An organic base, to which the name

Toruline has been given, has been isolated from this extract. Its nitrate, which apparently has the composition $C_7H_{10}O_2N$, occurs in feathery crystals, and is not precipitated by basic lead acetate, although thrown down by phosphotungstic acid. The extract loses its activity on warming, and the active substance is apparently easily decomposed by heat.—Biochem. Journ., VI, part 3, through Nature, October, 1912, 140.

Yoghurt-Glycobacterium: A New Milk Ferment from the Intestines of the Dog.—Dr. Piorkowski describes under the name of yoghurt-glycobacterium, a new milk ferment, discovered by Metschnikoff in the intestinal flora of the dog, which he believes to be destined to find favor for the preparation of a new sour milk possessing certain advantages over ordinary yoghurt-sour milk. The new bacterium possesses saccharifying properties and is therefore, according to Metschnikoff calculated to prevent or retard the formation of indol and scatol, the two powerfully poisonous bodies which are found in small

amounts in the large intestine and are held responsible for the senile degeneration of man. In ordinary yoghurt there are three kinds of bacteria, namely, *Bacillus bulgaricus*, which is the most important, since it has the function of destroying the putrefaction bacteria existing in the intestines, replacing them and forming lactic acid, and two others, consisting of *B-diplo-coccus* and *B-strepto-coccus*, which exercise the subordinate function of decomposing the sugar in the intestines. These several bacteria exert a more intense activity if in the presence of an abundance of sugar, and it is therefore recommended (and the practice) to administer the yoghurt in connection with saccharine food, such as dates or bananas. The sugar so provided is, however, almost entirely consumed before it can pass from the small into the large intestine and there exerts its saccharifying action producing the sugar necessary for the *Bacillus bulgaricus* to exert its function to retard or prevent the formation of indol and scatol in it. Dr. Piorkowski's investigations demonstrate that this new "Microbion" consists of immobile, ovoid, gram-negative bacilli, developing at as low a temperature as 22°-35° C. a rose-red to pale red metabolic product, which imparts a fine color to wafers, bread, rice, potatoes and flour, but is destroyed at higher temperatures. Milk is coagulated by it at 37° C., and at lower temperatures acquires a light rose-yellow color. The taste of the milk so produced is sweetish. In combination with yoghurt an agreeably-tasting sour milk is produced which symbiotically combines the glycobacterium with the bacteria ordinarily present in the yoghurt.—Pharm. Ztg., LVII (1912), No. 87, 876.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

MALT LIQUORS—SALES—STATE REGULATIONS.—Action was brought in the Mississippi State courts by a corporation engaged in the manufacture of a beverage called "Poinsetta" for a sum claimed under an agreement with the defendant for the purchase by him of the article on stated terms for five years for sale in exclusive territory

in Mississippi. For this exclusive right he was to pay \$500 within five days after making the contract, and it was to recover this sum that the action was brought, the defendant having repudiated the agreement at the outset, upon the ground that, on coming to Mississippi, he found it to be illegal to sell "Poinsetta" in that state. The trial court sustained the defense, and its judgment was affirmed by the Mississippi Supreme Court. The plaintiff took the case to the United States Supreme Court for review. The parties made an agreed statement of facts in which it was agreed that "Poinsetta" was not an intoxicant, and that "the United States government does not treat 'Poinsetta' as within the class of intoxicating liquors, and does not require anything to be done with reference to its sale." The state court construed the state statute as prohibiting the sale of all malt liquors, whether in fact intoxicating or not, and the United States Supreme Court held that this construction of the state statute was binding upon it. As the parties' contract contained no suggestion that the contemplated resales were to be made in the original imported packages, but was broad enough to include other sales, and hence encountered the local statute as applied to transactions outside the protection accorded by the Federal Constitution to interstate commerce, it was held that the state court's decision did not involve the denial of any right incident to interstate commerce.

By the terms of the contract the agreed prices were per cask containing 10 dozen bottles and per case containing 6 dozen bottles. It was held that each separate bottle shipped into the state under this contract could not be considered an original package, so as to save the local sales from the interdiction of the Mississippi statute prohibiting the sale of malt liquors.

Local sales of malt liquors, whether intoxicants or not, might, it was held, be forbidden by the state in the exercise of its police power, as is done by the Mississippi statute, without infringing the Federal Constitution, 14th Amendment, against taking liberty or property without due process of law.

Purity Extract & Tonic Co. v. Lynch, 33 Sup. Ct. Rep. 44.

DAMAGE TO FOUNTAIN IN TRANSIT.—Action was brought by the consignee of a soda fountain against the final carrier for damages

to a part of the fountain. The fountain was shipped in 15 or 16 separate boxes. When these were opened by the consignee the contents of one of them were discovered to be broken. There was no evidence introduced showing that the fountain was in good condition when delivered to the initial carrier. It was held that the plaintiff was not relieved from showing this by a provision in the bill of lading describing the property as being "in apparent good order, except as noted, (contents and condition of contents of package unknown)." This excluded any inference that the carrier admitted anything as to the condition of the contents of the boxes.

Alabama & V. R. Co. v. Cassell Drug Co., Mississippi Supreme Court, 59 So. 932.

DISTRIBUTING MEDICINE—REGULATION.—

The Indiana statute (Burns' Ann. St. 1908, section 2446), prohibits the distribution from house to house of medicinal preparations, or the giving or causing to be given to any child under the age of 16 years any such sample of medicine. Section 2447 prohibits the distribution of "any deleterious substance." In proceedings under the statute it was held that it prohibits the distribution, from house to house, of samples of medicine, though the samples are handed to adults, even though by implication the distribution of samples to adults on the street is not forbidden, as the Legislature has a wide discretion in determining methods and expedients for the protection of the public health.

The statutes were held not to be in violation of the state constitutional provision prohibiting the granting of privileges and immunities which upon the same terms shall not equally belong to all citizens, as that section cannot be invoked as against the exercise of a purely police power, when it is applied alike to all who may be affected by its exercise.

Ayers v. State, Indiana Supreme Court, 99 N. E. 730.

RIGHT TO INTEREST.—In an action for claim and delivery of a soda fountain, to which the plaintiff claimed title by reason of the possession of notes reserving title to the seller, on which it was alleged there was a balance due of \$871.50, with interest from April, 1909, the jury returned a verdict that the amount due on the notes was \$840. It was held that this presumptively included in-

terest, and the trial court could only render judgment bearing interest from its date.

American Soda Fountain Co. v. Shell, North Carolina Supreme Court, 76 S. E. 631.

TAXATION OF SODA FOUNTAINS.—A controversy without action was submitted to the supreme court of North Carolina to determine the legality of a license tax imposed by a municipal corporation upon soda fountains. The charter of the town provided that in addition to the powers therein specially enumerated, the town should have all the powers incident to corporations of like character under the general laws of the state. The state laws, Revisal 1906, section 2924, confers on cities and towns the power of annually levying a tax on all trades, professions and franchises carried on therein. It was held that the town was empowered to impose a license tax of \$5 on every soda fountain maintained in the town; the business of keeping soda fountains being a "trade" within the meaning of revenue acts, in regard to which the word is defined as "any employment or business embarked in for gain or profit."

Lenoir Drug Co. v. Town of Lenoir, 76 S. E. 480.

NEGLIGENCE IN FILLING PRESCRIPTION.—Action was brought for alleged negligence in compounding a physician's prescription calling for five grains of phenacetin and five grains of sugar of milk, to be put up in five powders, containing one grain each of the phenacetin and sugar of milk. One of the powders, given to a child of four years old, made her ill. It was held that the analysis of one of the powders which was found to contain but six-tenths of a grain of phenacetin was against the supposition of due care, the inference being that the surplus had got into one or more of the other powders. The medicine called for by the prescription had been successfully administered to the child for a year, so that the mother was not chargeable with contributory negligence in administering the powder without first consulting a physician.

Coughlin v. Bradbury, Maine Supreme Court, 85 Atl. 294.

UNLAWFUL SELLING OF COCAINE—QUANTITY NOT A TEST.—In sustaining an indictment under the New York Penal Law, Section 1746, charging the defendant with selling an "unknown quantity" of cocaine at re-

tail, not on the prescription of a physician, the New York Court of General Sessions held that it was sufficiently alleged that the sale was not at wholesale, the quantity sold not being made, by the statute, a test of a sale at wholesale.

People v. Levy, 138 N. Y. Supp., 163.

SEIZURES UNDER PURE FOOD ACT—REVIEW.—A decree of a Federal district court dismissed, after a trial without a jury, a libel having for its object the condemnation of food products seized upon land under the Pure Food Act of June 30, 1906. The United States Supreme Court holds that such a decree is reviewable in the circuit court of appeals by writ of error, and not by appeal, notwithstanding the provisions of section 10 of the act that the "proceedings of such libel cases shall conform as near as may be to the proceedings in admiralty, except that each party may demand trial by jury of any issue of fact joined." The reason is that such provision cannot be deemed to intend to liken such proceedings to those in admiralty beyond the seizure of the property by process *in rem*. After that the case assumes the character of an action at law with trial by jury if demanded, and with the review already obtaining in actions at law. The proper mode of reviewing being by writ of error, neither the action of the court nor the consent of the parties could confer jurisdiction of an appeal.

443 *Cans of Frozen Egg Produce v. United States*, 33 Sup. Ct. Rep., 50.

DUTY TO INSPECT FOOD.—The New York district court, S. D., holds that a packer, billing and selling pork to a retailer for sale to a consumer, owes a direct duty to the consumer to inspect the pork, to ascertain whether it is infected with trichinæ, or is otherwise unfit for food, and he is liable to the consumer for injuries sustained by failure to perform this duty.

Ketterer v. Armour & Co., 200 Fed. 322.

FOOD SOLD ON DINING CARS—NON-LIABILITY FOR INJURIES FROM.—In an action by a passenger against a railroad company for damages for injury to the plaintiff's health alleged to be caused by eating poisonous canned asparagus served to her on one of the defendant's dining cars, it was held by the Maine Supreme Court that a carrier of pas-

sengers is not an insurer of the quality of canned goods furnished on its dining cars. Where it serves such goods of a high brand, sold by a reliable dealer, guaranteed under the Pure Food Law, and without defect discoverable to eye, smell or taste, it is not liable for injuries caused by eating poisonous goods. All the facts ascertainable regarding the goods were as apparent to the passengers as to the railroad company; and it was impossible for the latter to know anything more about the contents of the can than did the passenger.

Bigelow v. Maine Cent. R. Co., 85 Atl. 396.

VIOLATION OF PURE FOOD LAWS—INTENT—ANALYSIS.—The Supreme Court of Washington holds that the statute (Rem. & Bal. Code, section 2513), providing that any person selling, delivering, offering for sale, or having in his possession with intent to sell or deliver, any milk of a grade below the standard therein fixed, is guilty of a misdemeanor, imposes the penalty for a violation thereof without regard to wrongful intention. The managing agent having control of the business of a corporation having in its possession such milk with intent to sell and deliver is criminally liable.

Section 5478 requires the person collecting samples of milk for analysis to send the result thereof to the person from whom the sample was taken, or the person responsible for the condition of the milk, within 10 days after obtaining such result. It does not provide that this is a prerequisite to a conviction for having possession of milk of a grade below the statutory standard. Section 5468 provides that the party collecting samples shall upon request seal and deliver to the owner or person from whose possession the milk is taken a portion of such sample, and that no evidence of the result of the analysis of such sample shall be received, if the collector refuses or neglects to seal and deliver a portion of such sample. Section 5477 provides that a producer of milk shall not be liable to prosecution unless a sealed sample thereof be given to him.

The conviction in the case at bar was reversed and a new trial ordered for error in giving oral instructions in a criminal case over the accused's objection. Laws 1909 c. 86, providing that the court must reduce its charge to writing.

State v. Burnam, 128 Pac., 218.

SALE OF MILK CONTAINING VISIBLE DIRT.—The Indiana Pure Food Law of 1907 was entitled "An act forbidding the manufacture, sale or offering for sale of any adulterated or misbranded foods or drugs, defining foods and drugs, stating wherein adulteration and misbranding of foods and drugs consist," etc. The Act of 1911 purported to amend section 3 of the prior act by adding as one of several things prohibited and made unlawful the sale of "milk which contains visible dirt." In proceedings for selling milk containing visible dirt the Indiana Supreme Court holds that the title shows that it embraces the general subject of the sale of food, and the object of securing to consumers pure and wholesome food. It is sufficiently broad to cover the prohibition of the sale of milk containing dirt; and the act is not in violation of the section of the Constitution providing that an act shall embrace but one subject and the matters properly connected therewith, which subject shall be expressed in the title.

The statute does not require that the keeping or selling shall be for food purposes. The affidavit seeking to charge the violation charged that the accused did "unlawfully sell" milk containing visible dirt. It was held that the use of the word "unlawfully" precluded all legal excuses for the offense, and even if the provision of the statute must be construed to prohibit only sales for food, the use of the word negated a sale for any other purpose.

In any event such laws are police regulations for the food supply of the people, and the law-making power is vested with a broad discretion to determine what is necessary to secure to the consumers cleanliness, wholesomeness and purity in so important and easily adulterated or tainted a food as milk. The courts will sustain such regulations without any attempt to limit them by construction.

Moreover, as the sale of the milk under any other circumstances or for any other purpose, which might make the sale lawful, would be a matter of defense, which could be shown under a plea of not guilty, the affi-

davit was not insufficient for failing to anticipate and negative such a sale.

Although the act fixes no standard by which visible dirt can be determined, it is not thereby rendered indefinite and incapable of enforcement. The term "visible dirt" has a common and specific meaning. "Visible" means perceivable by the eye; capable of being seen. "Dirt" is defined as any foul or filthy substance; whatever, adhering to anything, renders it foul, unclean or offensive.

State v. Closser, 99 N. E., 1037.



ABSTRACT OF U. S. TREASURY DECISION.

(T. D. 1820.) **ALCOHOLIC MEDICINAL PREPARATIONS.**—The classification of "Glycerine Tonic," manufactured by G. E. Kimmerer, of Canajoharie, N. Y., has been reconsidered, and the compound has been classed as an alcoholic medicinal preparation for manufacture and sale solely in good faith for medicinal use only, and special tax is not required.

(T. D. 33025.) **DRAWBACK ON LEONARDI'S BLOOD ELIXIR AND RENO'S NEW HEALTH.**—Drawback on domestic tax-paid alcohol used by S. B. Leonardi in Reno's New Health and Leonardi's Blood Elixir amended. Allowance for the blood elixir not to exceed 19.5 percent of the exported quantity; and for Reno's New Health 18 percent thereof. Allowance for worthless waste not to exceed 25.50 percent of the alcoholic content of the blood elixir exported, and 28.50 percent in the case of the New Health, computations to be made on a basis of 188° proof alcohol.

(T. D. 33020.) **WHITE SULPHUR MATCHES.**—The furnishing of official certificates of inspection, or bonds, for the production thereof, will not be required under T. D. 32975 until April 1, 1913, in the case of matches manufactured in Sweden and Norway, the governments of these countries not having had sufficient opportunity to make arrangements for the issuance of certificates.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the *JOURNAL*, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the *JOURNAL* can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whippley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.



REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the *JOURNAL*.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

A MISADVENTURE.

Through a mistake in the mailing department of the *JOURNAL*, too many copies of the March, 1912, issue were sent out, and as a consequence the number of copies of that month in stock is extremely small.

The general secretary will remit 35 cents for each copy of that issue which is sent to his office at Scio, Ohio, or will send in exchange any other number of the *JOURNAL* that may be desired.



A NEW DRUG JOURNAL.

The National Drug Clerk is the title of the new official organ of the National Association of Drug Clerks, and is issued from the national headquarters in Chicago. The editor and director of publicity is E. George Hopkins; the assistant editor is P. A. Mandabach, formerly of Columbus, Ohio.

The new publication is filled with matter interesting to drug clerks, has a good list of advertisements, and presents a good appearance, inside and outside.



THE WOMENS' SECTION.

At the Denver convention the Council provided for the creation of a Women's Section of the A. Ph. A., and this Section will hold its initial meeting at Nashville in August next.

In creating this new Section the Council did not adopt any rules or regulations defining or limiting its functions, but left these entirely to the discretion of the ladies themselves. This was done, not as suggested by a spiteful old bachelor, "because the married men on the Council knew better than to try any such thing," but because they knew that the ladies of the new section were quite competent to arrange their own constitution and by-laws and to plan their own activities, and in fact that they would do these things better if not interfered with.

The American Pharmaceutical Association was among the first, and possibly the very first of pharmaceutical associations to champion the cause of the woman pharmacist, and on numerous occasions by resolution and otherwise it has asserted her right to full recognition in pharmaceutical fields. On at least one occasion a special session of the Section on Education and Legislation was de-

voted to a symposium on Women in Pharmacy.

So also, women have frequently been elected to office in the Association, have been encouraged to read papers before its sections, and have served on its committees, proving that the Association has more than a mere academic interest in the subject.

That such a section was not created earlier has not been due to any lack of gallantry on the part of the men, but rather to the fact that they did not think of it, and the ladies were too modest to remind them of the omission.

The principal thought in the minds of the Council members in providing for this new section, was that it would emphasize the fact that the Association recognizes the place of women in pharmacy, and as evidence of its faith, voluntarily assigns to them a specific part in the activities of the organization.

Presumably, if the members of the Women's Section have any papers bearing upon the work of any of the other sections, they will read them before such sections, and will reserve the reading and discussion of papers that relate to women in pharmacy for their own section. Presumably, also, the Women's Section will have an important influence in directing the social functions of the annual meetings. These and other questions, however, can be safely left to experience and to the inclinations of the members of the new section.

The officers of the new section are already at work, and the chances are that a surprisingly good program will be presented at the first meeting.



THE NATIONAL DRUG TRADE CONFERENCE.

The Legislative Conference of National Pharmaceutical Organizations, called in consequence of certain resolutions adopted at the Denver convention of the American Pharmaceutical Association, met at the New Willard Hotel, Washington, D. C., January 15, and resulted in the formation of a permanent organization known as the National Drug Trade Conference.

As the Conference is to consist of delegates appointed annually by the constituent associations, it was thought advisable to provide only a skeleton form of organization governed by

a code of rules and regulations, rather than to create a body having a formal constitution and by-laws.

This code of regulations is published elsewhere in connection with the minutes of the proceedings of the conference.

Five national bodies were represented by three delegates each, though the code of regulations provides for the admission of other medical and pharmaceutical bodies by majority vote.

The proceedings of the Conference were highly satisfactory to all concerned. Anticipated difficulties due to supposedly conflicting interests did not appear, while the delegates of the several branches found, somewhat to their surprise, perhaps, that the representatives of the other branches were quite ready to meet them half way and to agree upon a basis of settlement fair to all.

It was the first time in history, as one of the delegates said, that all branches of the trade have been able to meet on common ground and present a united front. Another delegate said, "Why was such a conference not formed years ago?" Another declared, "This is the greatest thing that has ever been done for American pharmacy."

Even if the Conference should not possibly result in as much good as some of the more enthusiastic delegates thought it would, the good it has already accomplished amply justifies the action of the American Pharmaceutical Association in calling it together, and it was gratifying to note that among the most enthusiastic delegates present were some of those who both at Boston and at Denver opposed the Association's action.

In addition to providing a permanent form of organization, the Conference devoted nearly two days to the discussion of the Harrison bill, and to conferences with its distinguished author, Congressman Burton Harrison, of New York, and with the U. S. Opium Commissioner, Dr. Hamilton Wright. Numerous amendments important both to medicine and pharmacy were secured, and the Conference adjourned with the feeling that while the existing measure is still far from satisfactory, it will be considerably more efficient in controlling the traffic in habit-forming drugs, and will be far less burdensome to the legitimate druggist and conscientious physician than it would have been if enacted in the earlier form.

The Bulletin Board

REVISION OF PUBLIC HEALTH SERVICE REGU- LATIONS.

"A board of commissioned medical officers has been convened to meet at the bureau at the call of the chairman for the purpose of preparing a revision of the regulations for the government of the Public Health Service. The detail for the board is as follows: Assistant Surgeon General A. H. Glennan, Chairman; Assistant Surgeon General W. C. Rucker, Assistant Surgeon General John W. Trask, Surgeon John F. Anderson, and Passed Assistant Surgeon B. S. Warren, Recorder."—*Army and Navy Register*.

The convening of the above board is of vital interest to the pharmacists of the U. S. Public Health Service, as their pay is governed entirely by regulation.

Now is the time for every pharmacist of the country who has the status of his profession at heart to write to the Surgeon-General, Public Health Service, Washington, D. C., and urge him to do all in his power to correct in the forthcoming regulations the deficiency in the pay of the pharmacists of his Service, by giving them at least what the pharmacists of the Navy are getting.

The following pay table speaks for itself:

Table showing comparative rates of pay of the pharmacists of the Navy and the pharmacists of the Public Health Service of the United States:

Length of Service,	Annual Compensation	
	Navy ¹	P. H. S.
First 3 years.....	\$1,125.00	\$ 700.00
At end of 3 years....	1,375.00	880.00
At end of 6 years....	1,785.50	880.00
At end of 10 years....	1,840.00	960.00
At end of 12 years....	2,400.00	960.00
At end of 15 years....	2,600.00	1,300.00 ²
At end of 20 years....	2,800.00	1,400.00

¹The compensation of the Naval pharmacist as given in the above table is for shore duty; the scale of pay for sea duty is greater, the maximum reaching \$3,150 per annum.

²Provided promotion to the first grade has been reached.

The additional allowances for quarters, etc., for pharmacists of both services are practically the same.

The above rates of pay include 10% in-

crease on the annual salary for each five years' service; this applies to the pharmacists of both services.

<>

RESOLUTIONS ADOPTED BY THE DENVER BRANCH OF THE A. PH. A. AT ITS DE- CEMBER MEETING.

"WHEREAS, The Council of the A. Ph. A. is considering the discontinuance of the annual publication of the Association, and

"WHEREAS, The publication of this volume is a time-honored habit dear to every member, and

"WHEREAS, This volume is of great value and highly prized by each member as a book of reference and record of the Association's work, growing sets of which form a most valuable library of the pharmacist, and which would be lost to him in the future by its discontinuance for the reason that the careful filing and preserving of the monthly journal is a difficult and uncertain task under the conditions existing in the average retail drug store, and

"WHEREAS, Hundreds of pharmacists who have been asked and have joined the A. Ph. A. in the last year, who were told of this valuable volume, the receipt of which was one of the strong inducements that caused them to join, will be disappointed and will have been misled against the will of those who caused them to join; therefore

"Be it resolved by the Denver Branch of the A. Ph. A. in regular session assembled, that we most emphatically demand the publication and distribution of the "Proceedings" for 1911 and 1912 in accordance with the established custom of the Association, and that in case it be decided by the Council that it is for the best interest of the Association not to publish the annual 'Report on the Progress of Pharmacy' in the future as had been planned, that before such action takes effect this most vital step be submitted to a vote of the entire membership of the Association."

Signed: JOHN BEST, President.
F. W. NITARDY, Secretary.

(The 59th volume is now in press and will be distributed shortly to all members whose dues are paid.—J. H. Beal, General Secretary.)

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



NEW ENGLAND BRANCH.

The annual meeting of the New England Branch, A. Ph. A., was held on Wednesday evening, January 8, at Hotel Plaza, Boston.

The business meeting lasted less than half an hour, the treasurer's report being read and accepted and the following officers elected for the year:

President—Henry A. Estabrook, Fitchburg, Mass.

Vice-President—Carlton B. Wheeler, Hudson, Mass.

Secretary-Treasurer—R. Albro Newton, Southborough, Mass.

Chairman, Prof. Relations Com.—Frank F. Ernst, Jamaica Plain, Mass.

Chairman, Membership Com.—William H. Glover, Lawrence, Mass.

Elie H. LaPierre, Cambridge, Mass., was elected to the Council for three years.

After the short meeting an excellent dinner was served to our members and to the members of the Boston Association of Retail Druggists. Pres. Charles F. Nixon was master of ceremonies and had induced four very successful pharmacists to address the gathering on methods by which they had developed special profits.

The first speaker was Frank F. Ernst who had samples of a number of his specialties of the family remedy type, the gist of his remarks being that he made his own products, made them well, labelled them distinctively and sold them at a price higher than the average so-called non-secrets. As he has stated many times before, he keeps exact rec-

ord of the cost of materials used and also puts in small bottles such articles as Camphorated Oil immediately after making, doing away with the gummy shelf bottle and the five-cent sales.

S. V. Rintels talked on his store system, methods of handling cash and of marking goods. He stimulates clerks by the commission plan, paying the largest commission to the clerk selling the most of his own goods. Window signs on a level with the eye is something he always insists on, believing it to be one of the biggest little things in his business.

William R. Acheson showed by figures the very gratifying profits to be obtained by paying attention to specialties. The four articles he used as an illustration were Foot Powder, Embrocation, Solution Citrate Magnesia and Egg Emulsion Cod Liver Oil.

His method of handling the emulsion is especially unique, when called for either by prescription or on personal recommendation, the mortar is brought before the waiting patron, eggs broken into it, glycerin, oil, etc., added and the whole process completed in full view. The method with the added personal interest developed, creates a demand that is certainly remarkable.

Henry A. Estabrook endeavors to mark his individuality on all goods leaving his store and sells as large sizes as possible. He is very friendly with the physicians and maintains their confidence by keeping his name from all patents, and he prepares only such household remedies as are considered proper by common consent, such as Cough Syrup, Liniment, Cold Cream and Toilet Lotion.

His natural love for dogs and reputation for understanding them has lead him to make a line of dog medicines which enjoys a large sale. More and more has he given personal attention to trusses and hospital supplies, in fact he stated that should he have occasion to establish a new store, these lines would receive a large amount of attention.

Following these speakers, Pres. Nixon exhibited some of his specialties which are of unusual interest, Dental Cream, two kinds of Talcum, Milk Sugar and Olive Oil. Prof. Nixon's reputation as a chemist as well as druggist creates a large demand for preparations bearing his name.

Mr. Estabrook was introduced as the new president of the branch and after a few remarks the meeting was adjourned.

These meetings are of great benefit to retailers and as the remarks are usually extemporaneous the printed reports never convey all the points brought out. Free discussion is always desired and newcomers are always surprised at the freedom with which our successful men impart their secrets.

R. ALBRO NEWTON, Secretary.



PITTSBURGH BRANCH.

The proceedings of the January meeting of the Pittsburgh Branch were more than ever educational in character; each month much valuable information to those who are present is brought out in the general discussions that take place, only a small part of which can find its way into the published reports as they appear in these columns. For this reason those who attend gain much that is lost to those who merely read the proceedings.

It is a source of continual wonder that so many retail druggists fail to avail themselves of the opportunity the Branch offers to obtain a post-graduate course in pharmacy without price. Such utter indifference to their own interest does not argue well for the druggist in business or his clerks in this vicinity.

Pending the vote on a motion to approve the minutes of the December meeting they were discussed quite fully, during which discussion Dr. Blumenschein said that, to his mind, the non-poisonous character of Creolin-Pearson was not satisfactorily proven, and he is still of opinion that a careful druggist will continue to attach a poison label when dispensing it in less than original package containers. It is not what laboratory notes nor results obtained from physiological experiments show that settles this point, but where we are at under the provisions of the state poison law is the question at issue. No potent drug is poisonous, said Dr. Blumenschein, when properly used—hence the added words to the title on the label "When used in accordance with directions given," would apply equally well in the dispensing of any article of a poisonous character, and the use of the word poison dispensed with entirely.

This contention of Dr. Blumenschein was concurred in by Drs. Koch and Saalbach, and its reasonableness was apparent to all.

As chairman of the Committee on Practice Dr. Blumenschein submitted the accompany-

ing prescription which had been dispensed by a lady graduate of the Pittsburgh College of Pharmacy, located in business in the eastern part of the state, who thought it so unusual in character and had found difficult to dispense in anything like a satisfactory appearing capsule. It would not retain its shape nor color of contents.

R. Ammon. Iodid. drams 1.
Atropin Sulph. grains 1/10.
Codein Sulph. grains 6.
Creosote (beechwood) drams 2.
Ol. Santali drams 2.
M. Ft. Glutoid caps. No. 24.

The prescription was accompanied by these directions for making Glutoid capsules:

"Take an ordinary gelatine capsule and as soon as it is filled with the medicine, dip a camel's hair brush in melted gelatine or hot water and pass it around the line of union of the two parts until it is securely joined. As soon as this is dry immerse the capsule in pure formalin for three minutes, then wash thoroughly and dispense."

Samples of the capsules as dispensed to the patient, as well as others that Dr. Blumen-schein had experimented upon, were exhibited, and none of them bore a very inviting appearance. The point was raised, will a formalin treated capsule ever dissolve in the intestines? The solution of this query was referred to Dr. J. H. Wurdack to be reported upon at a future meeting.

In a communication from Dr. J. H. Beal these words were found: "I shall be gratified if you will present for discussion to the Pittsburgh Branch the subject of an Association Home."

Responding to this request, Dr. J. A. Koch, whose intimate official connection with the A. Ph. A. for many years has put him in position to know its needs, said one of the most urgent of these is a permanent location where the valuable collection of records, books and scientific publications can be kept, where they will not be subject to removal from time to time because of changing officers, a condition which has occasioned the loss of many of its cherished possessions impossible to replace.

On motion of Dr. Koch, supported by Dr. Saalbach, it was unanimously

Resolved, That the Pittsburgh Branch of the American Pharmaceutical Association approves of the idea of an Association Home.

and hereby pledges its moral and material support to that end.

In response to a further request from Dr. Beal, President Campbell urged the members of the Branch to enter the contest for the prizes offered as described in the December issue of the JOURNAL OF THE A. PH. A., viz.: Ten dollars for the most complete and practical Constitution and set of By-Laws for the government of a Local Branch. Five dollars for the second best. Ten dollars for the best set of model programs (seven or more) for the sessions of Local Branches. Five dollars for the second best. Every contestant must be a member of the A. Ph. A., and all papers be in the hands of the JOURNAL editor not later than February 1, 1913.

The election of officers was postponed until the February meeting.

The regular program feature was a lecture by Prof. J. A. Koch on the subject, "Polarimetry," which was handled in his usual thoroughgoing manner, and in which he succeeded in interesting even those of his hearers who know practically nothing of that branch of the science of chemistry.

Owing to the lateness of the hour it became necessary to hold Dr. J. H. Wurdack's lecture on "Analysis of Rocks" in reserve for the next meeting.

B. E. PRITCHARD, Secretary.



CITY OF WASHINGTON BRANCH.

The January meeting of the City of Washington Branch of the American Pharmaceutical Association was held January 15, 1913, at the National College of Pharmacy. Dr. L. F. Kebler, the president of the Branch, presided.

Communications from the general secretary of the association were read, received, and discussed. Dr. J. H. Beal, the general secretary of the Association, telephoned a few minutes after the meeting was convened that he would be unable to be present as he had anticipated.

The discussions of the evening covered the Harrison bill, now pending before Congress, the standardization of drugs, and the methods employed by unscrupulous manufacturers to evade the pure food and drugs act, with especial reference to male fern, senna, and colocynth; and plans for increasing the at-

tendance at the various meetings were also considered.

The next meeting will be held February 12, when Dr. Hoover will read a paper on senna siftings, and other matters will be taken up.

HENRY B. FLOYD, Secretary.



CHICAGO BRANCH.

The regular monthly meeting of the Chicago Branch of the American Pharmaceutical Association was held January 16.

President Wells was re-elected as president, W. B. Day, Wm. Gray and A. W. Linton were elected as first, second and third vice-presidents, respectively, and E. N. Gathercoal as secretary-treasurer.

The topic for the evening was "Pharmaceutical Legislation." Mr. H. C. Christensen, member of the Illinois Board of Pharmacy, introduced the subject with a most excellent paper in which he discussed the securing of legislation and the constitutional and legal requirements that must be complied with in the preparation and introduction of the bill and its passage through the various stages of legislation. He pointed out some of the difficulties that are met with and the necessity for continuous effort and vigilance in order to secure the passage of the bill.

He then discussed in detail the recommendations which were made by the Board of Pharmacy to the Governor of Illinois last month, and which were substantially those approved by the Illinois Pharmaceutical Association at its last convention. These recommendations in substance were as follows: (1) The establishment of the graduation prerequisite; (2) the making of more stringent restrictions and penalties regarding the possession, handling and sale of cocaine and its derivatives and allies; (3) state appropriations for the investigation and prosecution of offenders against the law, and for a laboratory where U. S. P. and N. F. preparations may be analyzed, and for more suitable prescription cases and equipment for the proper examination of candidates.

In speaking for the graduation prerequisite, Mr. Christensen pointed out that any law must first bear an important relation to the public before it could receive standing in legislation. Afterwards its relation to those especially interested or affected by the law

may be considered. He said "Opponents of graduation as a prerequisite may argue that 90% of the drug business is purely commercial and 10% professional, and that, therefore, college training is 90% unnecessary. But I reply that in times of sickness and distress, when the life of loved ones may be hanging in the balance, the 10% professional outweighs the 90% commercial."

Messrs. I. M. Light, J. A. Mahaffy, W. B. Day, Wm. Gray, I. A. Becker, C. M. Snow, A. H. Clark, A. W. Linton, James Crowley and others took part in the discussion.

The Branch by resolution indorsed the recommendations offered in Mr. Christensen's paper.

The Branch has extended to Dr. James H. Beal an invitation to deliver an address at the February meeting. His subject is "The Limestone Caverns of the U. S.," and the lecture will be illustrated by stereopticon slides. Druggists generally as well as members of the Branch will be invited.

W. B. DAY, Secretary.



NEW YORK BRANCH.

A regular meeting of the New York Branch of the American Pharmaceutical Association was held January 13, with President G. C. Dickman in the chair. Following the report of Treasurer Joseph Weinstein, J. I. Lascoff reported briefly as chairman of the committee on professional relations, and C. A. Mayo reported for the committee on membership.

A report for the special committee on the certification of pharmacies was presented by Hugh Craig. In the course of this report, Mr. Craig read a letter from the committee of the Medical Society of the County of New York, having to do with the same matter. This in effect was a statement that the doctors' committee did not see its way clear to meet with the committee of the Branch at the present time. Mr. Craig also referred to the newly-formed American Society of Medical Economies, one of whose purposes was to cooperate with other organizations with a view to the certification of pharmacies.

The report was duly received and at the suggestion of Mr. Craig the committee was discharged. The matter will be taken up by a new committee which was provided for in a motion by Jacob Diner. The matter was discussed somewhat at length by Messrs. Diner

and Craig. The former contended that a plan of certification somewhat on the order of that relating to dairies, or the plan of classification adopted by the American Medical Association for medical schools would be more feasible than an attempt to separate pharmacy from side lines by legislative enactment. Mr. Craig defended the committee's action in favoring a plan of legal classification because it was almost essential to the welfare of pharmacy that some plan be determined upon and because neither the county medical society nor the branch was willing to undertake the task of the actual certification.

For the committee on the progress of pharmacy Otto Raubenheimer gave brief abstracts of articles on the following subjects recently appearing in foreign journals: "New Method for the Preparation of Syrup of Calcium Lactophosphate," "The Preparation of Sterilized Solutions and Ampuls," "A New Process for Making Spirit of Camphor," "Collargol and Argentum Colloidal," and "Tooth-Brushes Supplied by Nature." Mr. Raubenheimer also gave an outline of the program of the Eleventh International Pharmaceutical Conference which will be held in a suburb of The Hague, September 17 to 21. This report was briefly commented upon by Messrs. Dickman and Mayo, and received with thanks by the Branch.

Secretary Craig read a communication from Dr. J. H. Beal, general secretary of the A. Ph. A., in which the Branch was asked to discuss the project of a home for the Association.

Mr. Mayo invited those present to attend the meeting of the College of Pharmacy of the City of New York on the evening of the 21st, at which time Prof. A. H. Elliott would speak on the subject of modern store illumination.

President Dickman announced the deaths of Thomas P. Cook and Ewen McIntyre, and appointed as a committee on memorials, Hugh Craig, C. A. Mayo, and Otto Raubenheimer.

Mr. Craig, reporting for the nominating committee, presented the names of the following as candidates for the several elective positions in the Branch: For president, C. O. Bigelow; for vice-president, H. V. Army; for secretary, Hugh Craig; for treasurer, Joseph Weinstein; for chairmen of committees—education and legislation, W. C. Anderson; progress of pharmacy, G. C. Dickman;

membership, Louis Berger; and professional relations, Peter Diamond.

These nominees were unanimously elected.

Mr. Diner called attention to the action of Sears-Roebuck & Company in ceasing to handle nostrums; and he declared that it was time that pharmacists awoke to a recognition of their responsibility in the same traffic.

Prof. C. P. Wimmer, the speaker of the evening, was introduced by Prof. Army, and read a very comprehensive and instructive paper on "Chlorophyl," in which he pointed out the formation and function of chlorophyl and its place in phytochemistry and reviewed the work of Willstoetter in connection with the chemistry of this substance. The speaker exhibited a number of solutions showing the variability of chlorophyl, and the products of the action of acids and of alkaloids upon it. He illustrated his remarks further with a diagrammatic schema on the black-board.

The pharmacal phase of the role of chlorophyl was discussed by Messrs. Raubenheimer and Weinstein, and the author of the paper was thanked by the Branch.

HUGH CRAIG, Secretary.



SAINT LOUIS BRANCH.

A regular meeting of the Saint Louis Branch of the American Pharmaceutical Association was held in the Saint Louis College of Pharmacy on Friday, December 20, and President Ilhardt called the meeting to order at 8:45 p. m.

The minutes of the meeting held on November 29 were approved as read, except the portion which referred to the sample of Compound Solution of Cresol exhibited by Professor Hemm, who stated that it was a general mixture of the samples prepared by the students in the laboratory at the temperature of the water-bath according to the suggestions of La Wall and Cook; and to the significance of certain figures appearing on the Procter prescriptions showed by Doctor Whelpley, which, according to his (Doctor Whelpley's) interpretation, were the prices charged for filling these prescriptions.

The secretary stated that in behalf of the members of the Saint Louis Branch he had sent congratulations and the season's greetings to Mr. George M. Beringer, Camden, New Jersey, president-elect of the Association.

Professor Suppan asked if the committee

appointed last spring to arrange for the summer outing meetings which were held, two at the Missouri Botanical Garden (Shaw's Garden), one at the Municipal Water Works at Chain of Rocks, and one at Anheuser-Busch Brewery, had reported, and being answered in the negative, suggested that said committee be asked to report at the next meeting and be discharged.

The chair called upon Mr. A. C. Schulte, who presented a paper entitled "Comments on Editor Beal's Prize Offers" which appeared on page 1442 in the December number of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. Mr. Sennewald made a motion, which prevailed, that Mr. Schulte's paper be received.

Professor Good then made a motion, which was duly seconded and carried, that the secretary call attention to Doctor Beal's Prize Offers on the notices for the next meeting.

Mr. Ilhardt presented a paper, arranged by P. W. Smith and himself, on a Quick Method for Making Solution of Citrate of Magnesium, which he stated was principally excerpts of articles appearing in a number of drug journals and in the literature sent out by some of the pharmaceutical houses.

In this process of manufacture, milk of magnesia is substituted for the magnesium carbonate and the citric acid in the official formula.

Mr. Ilhardt demonstrated the practicability of this process by preparing, in conjunction with his talk, a twelve-ounce bottle of solution of citrate of magnesium, which he stated will retain its freshness for some time if securely corked and kept in a cool place. He emphasized the fact that this is not a cheap method by any means, for the finished product will cost about double that made according to the U. S. P. formula, and further stated that in using this quick and easy process it is necessary to take into consideration the magnesia content of the milk of magnesia as supplied by the various houses for it varies considerably. When preparing the magma in the drug store a difficulty frequently is encountered due to the gelatinization of the magma.

In discussing this paper Professor Hemm gave it as his opinion that the troublesome process of making the magma can be avoided by using fresh light calcined magnesium, suggesting Jennings' product, which will give a homogeneous magma, using water and oxide

of magnesium in the proportion of sixteen to one to make the magma, then add the citric acid, etc.

Professor Suppan read some extracts from contributions which appeared in the National Druggist on the method of making Solution of Citrate of Magnesium, and sustained what Professor Hemm said on the subject.

Mr. Buchler brought up the subject whether the finished product should be colored, and it was the unanimous opinion that it should not be colored as it was not a poison.

Mr. Sennewald moved that Ilhardt-Smith's paper be received and that these members be extended a vote of thanks for their efforts.

Professor Good then made a motion which prevailed, that the article "Protected Medicines and the Pharmacopœia," appearing on page 1327 of December issue of THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION be made the major paper for discussion at the January meeting. The chair appointed J. M. Good, E. A. Sennewald and J. A. Mueller to lead the discussion.

There being no further business, and on motion of Mr. Buchler, the meeting adjourned. J. W. MACKELDEN, Secretary.

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NASHVILLE BRANCH.

At its regular monthly meeting in Furman Hall, Vanderbilt University, the Nashville Branch of the American Pharmaceutical Association began active work preparatory to the entertainment of the parent association, which will meet in Nashville in the latter part of August. Dr. E. A. Ruddiman, chairman of the general committee, announced the appointment of the chairmen of special committees as follows: Membership, Ira B. Clark; finance, M. E. Hutton; entertainment, Wm. R. White; hotels, J. B. Sand; reception, C. C. Young. These chairmen will constitute the executive committee, of which Dr. J. O. Burge is chairman.

Every member of the organization in Tennessee is appointed a member of the general committee, and urged to aid the chairman in the performance of his duties. The membership committee will launch an active campaign of the entire South for new members of the organization.

Chairman White, of the entertainment committee, has begun arrangements for the entertainment of the visitors to the convention. Besides the local features, efforts will

be made to secure special rates to Mammoth Cave and Lookout Mountain for those in attendance. Efforts are being made to secure attractive rates to the convention from all sections of the country so that announcement of the rates may be made at the next meeting of the various state organizations. Mr. Hutton has reported that the financial strength of the Nashville Branch will assure adequate funds for the requirements of the meeting.

The Nashville Branch has received many compliments locally for securing the convention of the American Pharmaceutical Association for Nashville. It has created a feeling of fellowship among the druggists of the city, and has helped bring the pharmacists and physicians of the city in closer contact and unison of purpose by joint discussions of the National Formulary and Pharmacopœia. The members have been greatly benefited by the discussion of up-to-date problems bearing on the profession.

The next meeting of the Branch will be held in Furman Hall February 13, and all druggists of Nashville are cordially invited to attend. Matters of general interest will be discussed. W. R. WHITE, Secretary.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.

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THOMAS PENROSE COOK.

Born March 26, 1849, died January 7, 1913, a member of the American Pharmaceutical Association for 35 years.

By THOMAS F. MAIN, Honorary President of the A. Ph. A.

Thomas Penrose Cook was born in Philadelphia and was left an orphan at the age of six years. He was brought up by his maternal grandfather, Thomas N. Penrose, an apothecary of that city, in whose store he subsequently became an apprentice and

clerk. He received his education in the public schools of Philadelphia, his time when out of school being spent in his grandfather's drug store, where he early learned the rudiments of the drug business, which in those days consisted largely in the handling of vegetable drugs and preparing them by means of the pestle and mortar and the hand drug mill for their ultimate uses, his practical work in the drug store being supplemented by a course of instruction at the Philadelphia College of Pharmacy.

At the end of his apprenticeship and having



THOMAS PENROSE COOK.

served his grandfather for a time as clerk, he secured a position with J. William Jones & Co., dealers in heavy chemicals and dye stuffs, where he was brought in contact with buyers of drugs and chemicals for use in the arts, and later, when in the employ of John C. Hurtt of Philadelphia, he learned the details of the jobbing drug business and demonstrated his ability as a salesman.

In 1871 he accepted a position with Powers & Weightman, considered at that time the leading manufacturers of fine chemicals in the United States, where he was put in charge of a new department formed to ex-

hibit goods of the company's manufacture at trade meetings of manufacturers, and conventions of medical and pharmaceutical associations. He showed marked ability in this line of work, his exhibits being tastefully designed to attract and hold attention, while his intimate knowledge of the goods shown and pleasing manner of presenting their merits, made friends for himself and the firm he represented.

Mr. Cook had charge of the Powers & Weightman display at the Philadelphia Exhibition of 1876, the first World's Fair held in the United States, where he came in contact with manufacturers of, and dealers in, chemicals from other countries, and formed acquaintances with leading men in the chemical trade from all parts of the world.

For 18 years Mr. Cook continued this work which took him into all sections of the country and gave him a favorable acquaintance, which in many cases ripened into warm friendship, with the prominent physicians, pharmacists, chemists and manufacturers using chemicals throughout the United States. This acquaintance was invaluable to Mr. Cook in some special work he did in 1889 for Eli Lilly & Co., then rapidly forging to the front as manufacturers of fine pharmaceuticals, and later for E. Merck of Darmstadt, who was about this time establishing a branch house in the United States.

Mr. Cook's experience up to 1893 seems to have been a preparation for what may be termed the business of his life, as in this year he became general manager, and later vice president, of the New York Quinine & Chemical Company, which specialized in the manufacture of a limited line of fine medicinal chemicals. Mr. Cook's intimate and favorable acquaintance with the leading users, dispensers, and prescribers of these goods, with his great ability in selecting the best methods of presenting them to their attention, scored an immediate success for his company and the N. Y. Q. chemicals became known and favored throughout the length and breadth of the land.

It was at this time that Mr. Cook, as the representative of his company, became a steady worker in the National Wholesale Druggists' Association; he regularly attended its meetings and was always willing to place at the disposal of its committees or members the knowledge gained from his wide experience. He was for a number of years

either a member or chairman of its Committee on Rates and Routes, while his systematic methods and social qualities made him a highly esteemed member of the Committee on Arrangements and Entertainment, the confidence of the trade in him and in his executive ability being such, that on two occasions when attendance of members at meetings of the Association was expected to be specially large, the entire arrangements for entertaining were placed in his hands, with such ample funds, that after providing what the members considered lavish entertainment, he returned a large percentage of the funds entrusted to him to the original subscribers.

For 20 years Mr. Cook was a member of the Drug Section of the New York Board of Trade and Transportation, serving it in all capacities where his intimate knowledge of the drug trade and the men engaged in it would prove useful. He was Chairman of the Section in 1904, was Chairman of its Legislative Committee for many years, and for a number of years preceding his death was one of the managing directors of the Board.

Soon after taking up his residence in the city he became a member of the College of Pharmacy of the City of New York, and in 1903 was elected to its Board of Trustees, and in 1910 to the Vice Presidency. His work for this institution was marked by the same conscientious care given to his personal business and the vacancy left in the ranks of the working officers of the College by his decease will be most difficult to fill.

In 1878 he joined the American Pharmaceutical Association and thereafter gave it constant and earnest support, recognizing it as the one Association in which all branches of the drug trade could unite and work for the common good. Unless business of importance prevented he was a regular attendant at its meetings and for many years was a prominent factor in arranging for the exhibitions of drugs, chemicals, pharmaceuticals and apparatus which were such attractive features at the annual gatherings. He gave freely of his time and experience to aid in carrying on the work of the Association.

Mr. Cook had an easy genial manner that was attractive to all those with whom he came in contact and this first feeling of good will grew into confidence upon further acquaintance, while his readiness to "lend a

hand" and impart the results of his wide and varied knowledge of trade matters to all who sought it, gained for him the gratitude and love of those who benefited by his advice.

Mr. Cook never sought leadership in any society to which he belonged, but was content to serve—so that the honors which came to him were in all cases a recognition of work well done, and to give him an opportunity for further usefulness.

In one sense the success of the business in which he was the head executive may be considered a monument to his memory, but his real monument is in the hearts of his hosts of friends in the drug and allied trades, who had learned to love him, and by whom he will ever be kindly remembered, while those who were intimately associated with him in the various societies which he served so long and faithfully, will always consider it a privilege that they enjoyed his companionship and will have the example of his constant devotion to duty ever before them.

Mr. Cook is survived by his widow and two children, Sarah E. and William G. Cook, to whom the sympathy of the entire trade is extended.

By J. M. PETERS, Assistant Manager of the National Lead Company, New York.

Mr. Main tells me you are preparing a memorial to our late friend, Thomas P. Cook, for the American Pharmaceutical Association, and I am sure you will not deem it amiss to incorporate with it some record of his service to other organizations connected with the Drug Trade. His life, from early boyhood, had been devoted to some branch of the drug business, and he had affiliated with many of its national, state and local organizations.

He recognized fully the obligations imposed by membership in such associations, and there is none to which he belonged whose members cannot testify to the loyalty, the intelligence, and the zeal, with which he labored for its welfare. But he went beyond this, and voluntarily assumed duties and responsibilities in the discharge of which he contributed largely to the success of organizations in whose councils he was simply a guest, whose presence and aid were always gladly welcomed and highly valued.

In the National Wholesale Druggists' Association of which he was an associate member for twenty years or more, he was an

arduous and unselfish worker and his contribution to the success of its conventions did much toward increasing the strength and adding to the efficiency of the organization.

In the New York Board of Trade and Transportation of which he became a member soon after taking up his residence in this city, he worked continuously and with great effectiveness not only in the various official positions he held, but equally on its committees or in the ranks of its members. His work on the Legislative Committee of the Drug Trade Section, of which he had been for a number of years the Chairman, has redounded to the benefit of every branch of the Drug Trade in the State of New York, and has been reflected in the legislation of other states.

Of his activity in retail organizations I have less intimate personal knowledge, but I know that it imposed upon him much arduous labor which was conscientiously performed and was fittingly recognized by his associates.

I had known "Tom" Cook for about thirty years and had known him intimately, but that period has not been long enough, nor the intimacy sufficiently close, to disclose to me an unkind thought, or to permit me to hear an uncharitable word concerning any human being whom he knew. This does not imply that he failed to discriminate between the good and the bad in men, or to condemn what he believed to be wrong. But his criticisms were never actuated by "envy, hatred or malice" and they were always marked by a charitableness which few of us are fortunate enough to be able always to feel, or to breathe into our dissensions.

His genial personality, his kindly disposition and the helpfulness he was always ready to extend, will make his memory a lasting pleasure to everyone who was fortunate enough to have had association with him.

By R. P. ROWE, Vice President of the National Lead Co., New York.

It was my privilege to know Mr. Cook for a great many years, especially his connection with the Drug and Chemical Club. Mr. Cook joined this club in 1895. He was elected to its Board of Governors in that year. He served as its vice president in 1895 and was elected president in 1896-1897. I served as a member of the Board with Mr. Cook and,

in fact, succeeded him as president in 1898, and I have often said the Drug and Chemical Club owes more to Thomas P. Cook than to anyone else. In our early struggles, where we were doing the best we could, he was a power of strength in the organization, unsparing, unselfish and inspiring us all to greater work, which ultimately put the Drug and Chemical Club in its present most prosperous condition. His death was a distinct loss to that organization, as it was to every institution and business with which he was connected.

Mr. Cook used to take his luncheon at a table with those particularly connected with the drug and collateral trades and I know we all feel there is one empty chair that no one in that club can fill as it was filled by the man we all loved, esteemed and revered, Thomas P. Cook.

By H. T. JARRETT, Manager New York
Branch Mallinckrodt Chemical
Works.

I had a long acquaintance and many experiences with Mr. Thomas P. Cook, and would say that I knew him for about forty years, but first came in close touch with him in 1875 in Kansas City. He was putting up an exhibit for Messrs. Powers & Weightman and I was erecting one for Messrs. Charles T. White & Co. I, like nearly everyone else, was short of tools or something, and it became a standing remark "Ask Tom Cook," and Tom Cook was always ready to lend his tools and even to lend himself to assist you in getting into shape. This spirit and his unflinching efforts to please, endeared him to all who came in contact with him, and he never changed.

By HENRY G. LOVIS, Chairman Drug Trade
Section, New York Board of Trade and
Transportation.

In reviewing the work done for the Drug Trade Section of the New York Board of Trade and Transportation by our late associate, Mr. Thomas Penrose Cook, though serving on various committees during the 20 years of his connection with the Section, as Chairman of the Section during the year 1904, and as Director in the General Board for many years, it is particularly his untiring and effective work on the Legislative Committee that has been of such vast importance to the members of the Drug Trade

not alone in New York City, but in the State and Nation.

As Chairman of that Committee for many years, at any or every sacrifice of personal convenience or engagement, he was ever ready for personal appearance at legislative hearings, whether in Albany, Washington, New York City or elsewhere, giving the best of his wise counsel and rare good judgment. Few, if any, legislative matters affecting the drug business during these 20 years failed to enlist his active attention, and the Drug Trade is deeply indebted to Thomas Penrose Cook for the indefatigable efforts which he constantly exercised for the protection and betterment of its interests in those ways.

By ROMAIN PIERSON, Publisher of The Practical Druggist, New York.

Those of us who were permitted to know Tom Cook loved and admired him for what he was, "our balance wheel." It was a motto in The Practical Druggist office "When in doubt consult Tom Cook," and I have often told him he ought to be put on our payroll at a big salary just as consulting engineer, for he could see so far into the future and the other man's position, thus keeping the editorial ship off the hidden rocks.

He would always go out of his way to help every publisher of a drug paper to fill his pages with crisp news items and he prepared new, "out of the beaten path," copy for the New York Quinine and Chemical Works that brought him fame and the company revenue.

He always, on every occasion, spoke in praiseworthy terms of every one, always championed the absent who were under fire, and for all these beautiful traits and many others, we, the publishers of drug journals, love Tom Cook.

By EDGAR D. TAYLOR, President Powers-Taylor Drug Co., Richmond, Va.

In the death of Mr. Thomas P. Cook the National Wholesale Druggists' Association has lost a most valuable member and one who was continuously active and highly useful. He was attractive personally and gentle in his manners and drew men to him and held them with a devotion that ripened into true friendship.

Any duties assigned him were undertaken without regard to the work and worry they would bring, and his service was character-

ized by earnestness, unselfishness and fidelity, for the sake of others. This high purpose was his chief aim and seemed to control his useful life. His superior judgment made him necessary on many committees, and in this capacity, as well as others, he will be sadly missed by his associates.

We accord to him a high place in our esteem and deeply mourn his departure.

By CLARENCE G. STONE, New York Branch of the Lambert Pharmacal Co.

The opportunity to contribute something to the JOURNAL regarding one of the various activities in which Mr. T. P. Cook was engaged, furnishes the writer with no little comfort, as the loss of our dear friend has made a vacancy to which it is hard to become accustomed, and it is a relief to say something about him.

In connection with the Committee on Arrangements and Entertainment of the National Wholesale Druggists' Association it has been possible to see the splendid unselfish character which was shown in Mr. Cook's life. My own acquaintance with Mr. Cook dates back to 1882, thirty-one years ago. For the past twenty years we have been associated together on the N. W. D. A. Committee and during that time there were constant evidences of the whole-souled interest which Mr. Cook had in things that would make others comfortable and happy.

No amount of personal inconvenience or loss could deter him from being ever ready to go anywhere or do anything to complete his share of the work. His sense of justice and fairness always stood out boldly, and no opportunity to profit by his position would change his attitude on questions which would arise, his sole desire being to receive his profit in the satisfaction he got from making it easy for others to enjoy themselves.

Every member of the Wholesale Drug trade of the United States has somewhere in his memory a kind thing Mr. Cook did for him, not once but many times, something which made his pathway more pleasant. This vast acquaintance and knowledge of individuals, together with the wonderfully seasoned experience which all these years had given him, made it possible for him to comprehend quickly the feasibility of plans for his committee, and the best means of getting them executed.

The N. W. D. A. meetings each year have

had some vacant chairs which sadly reminded us of the dear friends who have filled them in the past, and one this year which will be noticeable and held in affectionate memory, will be that of Thomas Penrose Cook.

The greatest monument which one can have is that built of the fond esteem of his friends, and of this material, the one erected by the N. W. D. A. will include a token from every member.



EWEN MCINTYRE.

By J. W. ENGLAND.

More than three-fourths of a century ago, a country lad, the third of six brothers, with an education primarily acquired in the little red schoolhouse, with an added two and one-half years at what was then known in New York State as the Academy, now obsolete, to secure that education walking nearly three miles morning and evening, and realizing the need of a choice of life work, secured a position in a drug store in New York City. A few days ago this same lad, Ewen McIntyre, after a life of years of labor and honor and the love of all who knew him, passed into the Great Beyond.

Ewen McIntyre died of pneumonia at his home in New York on January 8, 1913, at the age of eighty-eight years. He was born at Johnstown, N. Y., where he lived until he was seventeen years old, when he came to New York and entered the drug store of Dr. George D. Coggeshall, at Rose and Pearl streets, remaining for seven years, during which time he also attended the New York College of Pharmacy, from which he was graduated in 1847. He was the oldest living graduate of that institution. In 1849 he opened a drug store at Broadway and Eighteenth street, which he occupied until his retirement in 1896.

Mr. McIntyre served as a trustee of the New York College of Pharmacy from 1873 to 1874, when he was elected vice president, which office he held from 1875 to 1876, when he was elected president and served continuously from 1877 to 1889. In 1890 he was again elected a member of the board of trustees and served as such until 1892. From 1904 to the time of his death he was annually elected honorary president.

He was an honorary president of the

American Pharmaceutical Association, in 1910-11, as well as a life member of the St. Andrew's Society and the American Society of Natural History. He was made a Master in Pharmacy (Ph. M.), honoris causa, by the Philadelphia College of Pharmacy in 1912.

Mr. McIntyre had a most successful life, using the term success in its true sense, that is, not in the accumulation of dollars and cents, but in individual growth and achievement. His years were prolonged beyond the usual "three score and ten," but he was always busy, he was always progressive, and he was always full of youthful enthusiasm and sunshine, and these he passed on to his fellowmen.

Eighty-eight years of life and his soul never grew stale! Like other men, he had troubles of his own, but with a rare and beautiful optimism, his genial, kindly spirit met them with a smiling face and undaunted courage, and he conquered; and wherever trouble existed, among his fellowmen, and differences needed adjustment, he was often the factor that restored harmony and good feeling.

Like Leigh Hunt's "Abou Ben Adhem," he loved his fellowmen.

At the Boston (1911) meeting of the American Pharmaceutical Association, before the Section on Historical Pharmacy, he presented a most interesting paper on "Some Pharmacists in New York City Three-fourths of a Century Ago," the concluding paragraph of which reads:

"Now after all these years the lad is still spared, greatly honored by the A. Ph. A. at its last gathering by its action so entirely unlooked for and unexpected (i. e., election as the Honorary President of the Association, J. W. E.). He wonders if it be possible that in the next seventy-five years the marvelous progress that has taken place in his day will be repeated. He remembers that he has counted thirty or forty wagons and teams a day, known as 'prairie schooners,' loaded with a few household effects and sturdy New England pioneers, on their way to settle the West; now the great states of Ohio, Indiana, Illinois and Michigan. He has seen building the second traffic railroad in this country, from Schenectady to Utica, passing near his father's door. In those days there were no matches, no photographing, telegraph, electricity and its marvelous adap-

tation in the service of our everyday life. There was no A. Ph. A. even. Shall this great progress go on? And why not? For even now we see machines and men flying in the air. So it behooves every member of the Association to stand with one purpose, one aim, to raise the standing of our profession and do all that we can and should do in relieving sickness, suffering and pain, so largely a part of man's inheritance."

May the life of this grand old man in American Pharmacy be an inspiration to all of us!

The funeral services were held in the Fifth Avenue Presbyterian Church of which Mr. McIntyre had been a member for sixty-five years, and was attended by the faculty and board of trustees of the College of Pharmacy of the City of New York, and many prominent representatives of the pharmaceutical world. His wife, four sons and five daughters survive him.

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EDWIN O. GALE.

By J. W. ENGLAND.

Edwin Oscar Gale, founder of the firm of Gale & Blocki and the oldest citizen of Chicago, died on January 23, 1913, at 347 Lake street, Oak Park, at the age of 81. He had been in failing health for several years.

Mr. Gale was born in New York on May 7, 1832. In his "Reminiscences of Early Chicago," he tells of his trip through the Erie canal with his father and mother, brother and two sisters and the long journey to the new west. He tells of the hats his mother brought with her and the opening of the "New York Millinery Store." He tells of the wonder of the Indians at the "bird in the box," as they christened the piano his mother played in their first house at Randolph street and Fifth avenue. And he tells with pride of his defeat of "Monkey" Beaubien, a schoolmate, with whom after school he swam races in the Chicago river.

Shortly after the predecessor of the present big drug house was established, in 1847, he entered it, reorganizing it later. In this work he continued until fifteen years ago, outliving the active service of his partner, William F. Blocki, who, though retired, survives him.

In the fire of 1871, his drug store was destroyed. When Mr. Gale went to look at the ruins he found a single case of hair-brushes

uninjured. These he sold promptly, sent his partner East for more stock, and resumed business. The firm is probably the oldest retail concern in Chicago.

Since Mr. Gale's retirement he has written his reminiscences and a little book of miscellaneous and occasional poems, "Falling Leaves." He was a charter member of the "Borrowed Time Club," the unique Oak Park organization of old people who have passed their three-score years and ten.

He was a life member of the American Pharmaceutical Association, having joined in 1857.

In 1856 he married Miss Julia Hart of Belvidere, now, at 79, frail, but in reasonably good health. They removed to Oak Park, then a community of twenty families, in 1866, and enjoyed transportation service of one train a day.

In addition to Mrs. Gale there are five of the seven sons surviving. These are Walter H., E. Vincent, Abram, G. Whittier, and Oliver Marble. There are eleven grandchildren.

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THOMAS WHITFIELD.

Thomas Whitfield died in Chicago on January 23, 1913. He was the oldest alumnus of the Chicago College of Pharmacy (now University of Illinois School of Pharmacy), having graduated with the class of 1860.

Mr. Whitfield served in the Civil War as a member of Taylor's Battery B, First Illinois Artillery.

He became a member of the American Pharmaceutical Association in 1865.

The funeral services were held on January 25, 1913, at Rosehill Chapel. J. W. E.

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LOUIS LEHMAN.

Louis Lehman, of 1038 Wilson Avenue, Chicago, died at the Lakeview Hospital, Chicago, on January 7, 1913. He was graduated from the Chicago College of Pharmacy in 1885, and took a deep interest in organization affairs. He was a member of the Chicago Retail Druggists' Association, and a member of the Illinois Pharmaceutical Association. He joined the American Pharmaceutical Association in 1905. He was a close friend of the late Albert E. Ebert and C. S. N. Hallberg. J. W. E.

Council Business

COUNCIL LETTER No. 8.

PHILADELPHIA, January 14, 1913.

To the Members of the Council:

Motions No. 6 (Postponement of Date of Meeting of Legislative Conference), No. 7 (Appropriation for Expenses of National Syllabus Committee), and No. 11 (Appropriation to Committee on Pharmacopoeias and Formularies), have received a majority of affirmative votes.

In changing the by-laws of the Association to make the fiscal year the same as the calendar year, the General Rules of Finance were not changed to correspond. Hence, these, as they stand, require that the books of the Treasurer and Secretary be sent to the Auditing Committee in July of each year.

The following motion is therefore offered:

Motion No. 12 (Change of Rule of Finance for Auditing Books). Moved by J. H. Beal, seconded by J. W. England, that the dates provided in the General Rules of Finance (Rule Tenth) for balancing and auditing the books of the General Secretary and Treasurer, be changed to correspond to the changes made in the by-laws at the 59th and 60th annual conventions.

Motion No. 13 (Prices of Bound Volumes of Proceedings). Moved by J. H. Beal, seconded by F. M. Apple, that the General Secretary, Treasurer, and Secretary of the Council be made a special committee to readjust the prices for the sale of bound volumes of the Proceedings, and that this committee be also authorized to name a special price to Libraries of Colleges of Pharmacy and similar institutions.

Motion No. 14 (Appropriation for Delegates to National Legislative Conference). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$100, or so much thereof as is necessary, be appropriated to cover the expense of the delegates to the National Legislative Conference held at Washington, D. C., January 15, 1913.

This appropriation has been approved by the Committee on Finance.

Motion No. 15 (Election of Members).

You are requested to vote on the following applications for membership:

No. 40. Thos. J. Janda, 1017 East Ohio St., N. S., Pittsburgh, Pa., rec. by B. E. Pritchard and J. A. Koch.

No. 41. George Judisch, Ames, Iowa, rec. by Wilber J. Teeters and Zada M. Cooper.

No. 42. William C. Bartholomew, 3218 N. Capitol Ave., Indianapolis, Ind., rec. by Frank R. Eldred and Francis E. Bibbins.

No. 43. Fred Dahl, 148 Parker St., Newark, N. J., rec. by Birdsey L. Maltbie and J. H. Beal.

No. 44. Theodore Robert Schwerdtmann, West End Hotel, St. Louis, Mo., rec. by Carl T. Buehler and J. W. Mackelden.

No. 45. Rodney Beecher Harvey, Y. M. C. A., cor. New York and Illinois Sts., Indianapolis, Ind., rec. by F. A. Miller and Frank R. Eldred.

No. 46. J. Earle Harper, Clearwater, Nebraska, rec. by Herbert Lock and Frank Koss.

No. 47. Clarence Ashton Leavitt, 511 Grand St., Pullman, Washington, rec. by Geo. H. Watt and J. H. Beal.

No. 48. John Anthony Mueller, 2200 S. Broadway, St. Louis, Mo., rec. by A. C. Shutte and Carl T. Buehler.

No. 49. Petko L. Ivanoff, 32 Adams Ave., Detroit, Mich., rec. by Leonard A. Seltzer and A. A. Wheeler.

No. 50. Almon E. Moyer, 32 Adams Ave., Detroit, Mich., rec. by Leonard A. Seltzer and A. Alton Wheeler.

No. 51. Archibald L. Lederle, 32 Adams Ave., Detroit, Mich., rec. by Leonard A. Seltzer and A. Alton Wheeler.

No. 52. Ray A. Hugill, 32 Adams Ave. W., Detroit, Mich., rec. by Leonard A. Seltzer and A. Alton Wheeler.

No. 53. Forest Jackson Goodrich, 6307 Brooklyn Ave., Seattle, Wash., rec. by Chas. W. Johnson and L. S. Gilbertson.

No. 54. William Frederick Kahre, 11 South 4th St., St. Louis, Mo., rec. by J. V. Mackelden and W. H. Lamont.

No. 55. Earl Utterback, 532 S. Van Buren St., Iowa City, Ia., rec. by R. A. Kuener and Wilber J. Teeters.

No. 56. Carl B. Burnside, 724 E. Market St., Iowa City, Iowa, rec. by R. A. Kuener and Zada M. Cooper.

No. 57. Joseph J. Von Koss, 32 Adams Ave. W., Detroit, Mich., rec. by L. A. Seltzer and H. M. Whelpley.

No. 58. C. G. Euler, 18-20 Platt St., New York, N. Y., rec. by Otto Raubenheimer and Romaine Pierson.

No. 59. John Stanislaus Michalski, 1524 Rhine St. N. S., Pittsburgh, Pa., rec. by J. A. Koch and Fred J. Blumenschein.

J. W. ENGLAND,
Secretary of the Council.



COUNCIL LETTER No. 9.

PHILADELPHIA, January 15, 1913.

To the Members of the Council:

The following communication has been received from President W. B. Day:

"To the Members of the Council:

At the Denver meeting our Committee on Time and Place of the next convention decided upon the third week in August, which would be the week beginning August 18th, as the most suitable date for our meeting. Subsequently, this was changed by action of the Council to August 25th, but before the action of the Council had been published the Executive Committee of the N. A. R. D. met in Chicago and fixed the date of their coming meeting for the week beginning August 25th. The N. A. R. D. meeting is to be held in Cincinnati. I am informed that the N. A. R. D. Committee alone has the power to fix the date of the annual convention and that they selected the time with special reference to our meeting as announced in our journal, so as to avoid conflict and have their meeting the week following ours with a view of making it as convenient as possible for those interested in both associations to attend both meetings.

Under these circumstances, I believe that we ought to revert to the date originally proposed for our Convention, that is Monday, August 18th, unless there is some very good reason to the contrary, and I offer a motion to that effect. Secretary Beal seconds this motion.

I think it is of much importance that this matter should be settled as early as possible, for obvious reasons.

Very truly yours,
W. B. DAY.

Chicago, January 14, 1913."

The above will be regarded as *Motion No. 16 (Reconsideration of Motion No. 3 (Time of 1913 Annual Meeting) and change to the week beginning August 18, 1913)*. Do you approve of above motion?

J. W. ENGLAND,
Secretary of the Council.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.



PLACAK, HARRY,
From 3625 Woodbridge Ave.
To 3039 Woodland Ave., Cleveland, O.

O'NEIL, HENRY M.,
From 888 Columbus Ave.
To 314 W. 14th St., New York City.

SALA, ALBERT F.,
From 205 W. 12th St.
To 114 W. Washington St., Winchester, Ind.

THOMAS, GLENN D.,
From Villisca, Ia.
To Box 84, Stewartville, Minn.

WHITE, J. LEYDEN,
From 1700 14th St. N. W.,
To 617 Southern Bldg., Washington, D. C.

LAMONT, W. H.,
From care Eli Lilly & Co., St. Louis, Mo...
To 908 Central St., Kansas City, Mo.

CREIGHTON, MISS MARY L.,
From Scio, O.
To 2246 Fourth St., San Diego, Cal.

MILLER, WM. L.,
From Box 343, Detroit, Mich.
To Box 387, Portland, Oregon.

UNITED STATES PUBLIC HEALTH SERVICE.

(Recent changes in pharmacists' assignments, etc.)

Holsendorf, B. E., Pharmacist. Granted 30 days' leave of absence from Feb. 21, 1913 Jan. 8, 1913.

Holsendorf, B. E., Pharmacist. Leave of absence for 30 days' from Feb. 21, 1913,

amended to read "30 days' leave of absence from Feb. 9, 1913." Jan. 24, 1913.

Berkowitz, M. E., Pharmacist. Relieved from duty at the Marine Hospital, Boston, Mass., and directed to proceed to Philadelphia, Pa., and report to Surgeon W. G. Stimpson for duty. Jan. 23, 1913.

Riley, John A., Pharmacist. Directed to proceed to Boston, Mass., and report to the medical officer in command of the Marine Hospital for duty and assignment to quarters. Jan. 23, 1913.

APPOINTMENT.

John A. Riley appointed Pharmacist of the Third Class. Jan. 15, 1913.

RESIGNATION.

Pharmacist John L. Osborne resigned to take effect Dec. 19, 1912. Dec. 27, 1912.

BOARD CONVENED.

Board of medical officers convened to meet at the call of the chairman for the purpose of preparing a revision of the regulations for the government of the United States Public Health Service. Detail for the board: Assistant Surgeon General A. H. Glennan, Chairman, Assistant Surgeon General W. C. Rucker; Assistant Surgeon General J. W. Trask; Surgeon John F. Anderson; Passed Assistant Surgeon B. S. Warren, Recorder.

SALESMANSHIP AND THE DRUG CLERK.

Salesmanship, as applied to the drug clerk, may be said to consist of three things:

First—Know all about the goods you are expected to sell.

Second—Take a sincere interest in the customer's wants.

Third—Try to make the same profit for your employer as you would for yourself.

How is the clerk to learn about the goods? Ask anybody likely to have the information. Talk to the sales-man when he comes around. If he cannot give you some good selling points he is not on to his job. Learn all you can from your employer. He will think more of you if he sees you are anxious to increase your knowledge of his stock. Learn all you can about anything you have to sell. It makes a tremendous difference if you are

armed with real inside information about the articles you are trying to sell. Study the goods yourself. Often you will be able to pick up a good point of your own.

Take an interest in your customer's wants. Put yourself in his place. You know how disagreeable it is to meet with a gruff or indifferent attendant at a theater, store, restaurant, railway station or elsewhere. Avoid in yourself what you dislike in others. You need not fawn, you need not coax, cozen or wheedle. Simply treat the customer as you would like to be treated if you were to exchange places.—*Voice of the Retail Druggist.*

THE TOP OF THE SALARY LIST.

When you once get inside of a drug store keep your mouth shut and your head and hands busy. Don't talk—work! There is nothing romantic or exciting about success. The stories you read in the *Golden Argosy* about the proprietor of the store picking a newsboy out of the gutter and marrying him to his daughter are all buncomb pure and simple. Success is just like walking. It's simply putting one foot ahead of another and repeating the same process over and over. This process will take a man from coast to coast in time and this same process will land a man success if he hangs on. The faster he does it the quicker success comes.

One raise at a time will put you at the top of the salary list if you will keep on plugging. You have got to keep your eyes on the job ahead of you, though. The very moment you have mastered the work assigned to you begin to look for more work. Don't imagine for a moment that the man you are working for don't know who is doing the work around your store. Don't dream for a minute that you are not being watched every minute. Keep right at it and the whirligig of time will bring you your reward.

When you see a way to save the boss a dollar save it and say nothing. When you see a way to make the boss a dollar, make it and say nothing. When you have done this half a dozen times the boss will begin to sit up and take notice.—*Roe Fulkerson, in Southern Pharmaceutical Journal.*

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Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE CLAIMS OF THE MILITARY PHARMACIST.

THE citizen who enters the United States military service is required to surrender many of his civilian rights, not the least of which is the right to select his own pharmacist and medical attendant when ill. Willy nilly, the soldier must accept the medical service furnished by the government, and his refusal to accept treatment prescribed by the medical officer, or the medicine compounded by the military pharmacist is a punishable offense.

Governments can not, or at least should not, assume authority with respect to the lives of their citizens without accepting the corresponding obligations—the obligation in this case being to supply medical attendance and pharmaceutical service that shall be on a par with a fair average of that which is available to the civilian.

So far as surgical and medical attendance are concerned, the adequacy of the service provided by the government may be regarded as quite satisfactory, which is due to the fact that the rank and pay of the army surgeons and physicians are such as to justify men of the requisite ability and training in devoting themselves to the work.

When the pharmacist is reached, however, the conditions are the reverse of satisfactory. In his case the conditions under which he must work, and the rank and pay allotted, could not operate more effectually to drive good men out of the service and to prevent good men from entering it, if they had been devised for these specific purposes, and in military circles it is an open secret that, under existing conditions, it is practically impossible to secure desirable recruits for the Hospital Corps.

Every state and territorial division of the United States now has statutory

provisions requiring the appropriate qualification of those who compound and dispense drugs and medicines. The general government alone enjoys the questionable distinction of furnishing pharmaceutical service under such conditions as to render it next to impossible for men of the requisite ability to enter or remain in this line of work.

That the Army Hospital Corps still retains men of character and ability is due to the personal devotion of the men themselves, and to the oft repeated assurances that their acknowledged grievances would be properly adjusted.

Just where the responsibility for the long postponement of justice to these men should be placed, it is difficult for a civilian to determine, but circumstances seem to point to that section of the military establishment known as the "War Department General Staff," and is apparently due to the persistent refusal, or neglect of that body to heed the repeated recommendations of the Surgeon-General for changes that would permit the improvement of the personnel of the Hospital Corps. In his report to the Secretary of War for 1911, the Surgeon-General calls attention to the necessity for legislation to correct the evils complained of, and states that "complaints have continued to come from all quarters, that the recruits of the Hospital Corps do not furnish fit material" for the services they are expected to perform.

Military regulations may debar pharmacists in the service from criticising the acts of their superiors, but the writer not being subject to such regulations does not hesitate to say that whatever section of the military establishment is responsible for present conditions in the Army Hospital Corps, so far as pharmaceutical service is concerned, has been criminally negligent of the lives and welfare of the enlisted men who through illness or injury may need hospital treatment, and if these conditions are not improved within a reasonable length of time they will reach the proportions of a common scandal.

Both the American Medical and the American Pharmaceutical Associations have repeatedly expressed themselves in favor of legislation for the improvement of the personnel of the Hospital Corps, and if such amendments are much longer delayed it may be necessary for these associations to announce publicly that those who enlist in the army do so at the peril of their lives, in case of accident or illness.

In the last Congress there was presented a bill which has come to be known as the Hughes-Bacon Bill, designed to correct these conditions. The bill which is very brief in its terms is as follows:

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled: That the Hospital Corps of the United States Army shall hereafter be known and designed as the Medical Corps, shall constitute the enlisted personnel of the Medical Corps now authorized by law, and shall consist of sergeants major, at seventy-five dollars per month; sergeants first class, at sixty-five dollars per month; sergeants, at thirty-six dollars per month; corporals, at twenty-four dollars per month; cooks, at thirty dollars per month; privates, first class, at twenty-one dollars per month; and privates, at sixteen dollars per month, with such increase for length of service and other allowances as are or may hereafter be established by law."

There is reason to believe that the medical officers of the Army approve the bill

in its essential features, and that its enactment in practically its present form would be agreeably received by them.

At the time this is written it is impossible to predict the fate of the measure, but in case of its having been defeated the A. Ph. A. and A. M. A. should exert themselves to secure its reintroduction into the next Congress and press persistently for its enactment.

This legislation is asked for not simply as a favor to the men of the Hospital Corps, but as a measure of elementary justice to every one in the military service, any one of whom may become the occupant of a hospital and subject to the ministrations of the pharmacists and other attendants provided therein.

J. H. BEAL.



WHEN SINNERS ENTICE.

A MONTH or so back the daily newspapers were filled with sensational accounts of the arrest of about 170 doctors, druggists and others for the alleged offense of mailing articles which the postal laws, by construction, make unmailable.

The accounts were featured under "scare heads," and in literary character reached the most approved yellow style of reportorial art. That is, they asserted few facts directly, but many by innuendo and suggestion, as for example, when it was set forth in general terms that the articles mailed were intended for immoral purposes, leaving the reader to imagine them to consist of various heinous and unmentionable agents, when as a matter of fact, in many cases at least, the articles consisted of syringes, which like hundreds of other things might or might not be used improperly. So also there was a conspicuous absence of the mention of extenuating circumstances, as for instance, that the sale of these articles would have been legal if made over the counter, and that the offense consisted not in selling the things, but in sending them by mail.

While every reputable member of pharmacy and medicine must rejoice when the fakirs in the ranks of either are run to earth, there were some features connected with the alleged exposé that did not just look right to the man who favors the square deal, as well in law enforcement as elsewhere.

In various ways the published accounts show that efforts were made, not so much to discover evidence of habitual violation of the law, as to persuade or cajole the victim into violating it. For example, we are informed that after numerous vain attempts to persuade a physician to furnish what was wanted, "then the caller in apparent despair began to weep copiously," after which profuse lachrymation we are permitted to infer that the physician succumbed, though the nature of the article supplied is not stated.

And again, "In another case the inspectors worked for months before they obtained evidence upon which a conviction would be possible."

Since it is alleged that the work was undertaken to "break up a common practice," and since the only evidence necessary would have been to have the parties supply the illegal articles by mail, why were such strenuous exertions required, and why should it have taken the inspectors "months" to obtain such evidence?

It is related with evident glee that many of the persons trapped were "respectable physicians," or other persons highly respected in their respective com-

munities, and yet we are asked to believe that these people were intentional and habitual law breakers, because after "months of effort," "copious weeping," and the use of false and fraudulent letters they were persuaded into the technical violation of a postal law which perhaps they had never heard of, and would not have understood if they had read it.

It is admitted in the published accounts that in order to obtain the desired evidence it was necessary to use letters subscribed with false signatures and filled with falsehoods—truly a fine way to preserve the sanctity of the mail sack, and by those whose supposed duty it is to guard it!

As a fair question, how many average druggists or physicians, not regularly doing a mail order business, would be likely to know of the existence of such a law, or would have been able to interpret it correctly if it had been read to them?

While it is true that ignorance of the law excuses no one (except, of course, judges and lawyers), nevertheless most people will have some sympathy for the man who is trapped into the violation of a regulation he never heard of.

The officers of the Ohio State Pharmaceutical Association feeling that injustice had been done, in some instances at least, called a special meeting of its members for a consideration of the subject, and as a result of the meeting the Council of that Association has adopted the following preamble and resolutions:

"WHEREAS, The United States Postal Laws regulating the transmission of drugs, compounded medicines and medical appliances are so indefinite in their provisions as to render it difficult or impossible to determine the character of substances which may be lawfully transmitted by mail; and

"WHEREAS, Many useful and necessary drugs, medicines and medical appliances are of such a nature that they can also be used for improper purposes when in the hands of the criminally inclined; and

"WHEREAS, Druggists innocent of any evil intent have been arrested and fined for technical violation of the said postal laws; therefore be it

"*Resolved*, That the druggists of the State of Ohio request of the Federal Congress that it make such a revision of the Postal Laws as will make clear and definite the character of drugs, medicines and medical appliances that may be lawfully transmitted by mail; and be it further

"*Resolved*, That when the articles are such as have a proper and legitimate use in medicine, druggists should not be held criminally liable for sending such articles by mail unless it be shown that such articles were mailed with guilty intent; and be it also further

"*Resolved*, That in all prosecutions for the violation of such laws the accused shall be permitted to show in defense that such articles were mailed in good faith to be used for legitimate purposes only, and without any reason to believe that they were to be used for immoral or other improper purposes."

Doubtless many of the men arrested, possibly a majority, were intentional violators of the law and no sympathy need be wasted upon them, but it is difficult to consider the raid as a whole without coming to the conclusion that the dragnet also included some who were entirely innocent of intentional wrong doing, and who were the victims of a "frame up" entirely unworthy of those entitled to call themselves officers of the United States Government.

Said the Duchess to Alice in Wonderland, "Everything's got a moral, if only you can find it." The story of the raid by the postoffice authorities has two morals—

1. Post up in the law as well as in the Pharmacopœia.

2. When sinners entice thee, consent thou not.

J. H. BEAL.

Book Reviews

PHARMACY; THEORETICAL AND PRACTICAL. A Text-Book Treating of the General Principles of Theoretical and Practical Pharmacy. 493 octavo pages. By Oscar Oldberg, Pharm. D. LL.D., Dean Emeritus Northwestern University School of Pharmacy, Chicago. Geo. D. Oglesby, Publisher, 31 Lake St., Chicago, 1913. \$3.00.

This, the latest, and destined also to be the final contribution of its distinguished author to didactic pharmacy, is received with unusual interest by pharmacists at this time, notice of the author's death coming to hand just prior to the writing of these few lines.

While the work does not aim to be as comprehensive as some other manuals of pharmacy, it does present an excellent review of that heterogeneous collection of physico-chemical facts and processes that are commonly included under the title, *Theory and Practice of Pharmacy*.

In this volume the author is seen at his best in the elucidation of natural laws in their pharmaceutical relationship, and if age and disease had impaired his physical powers, the impairment is not reflected in the present work. Here we see the same power of critical analysis, of clear and concise definition and of comprehensive generalization that have distinguished his writings in the past, and while there is perhaps nothing absolutely new in the subject matter, the manner of its presentation is so fresh, and in such attractively written English, that the volume will be read with interest by those who long ago have attained the rank of master pharmacist, as well as by those just entering the work of their apprenticeship.

The selection of topics and their arrangement display clearly the mental attitude of one who has long been a teacher, and to those who have occupied like positions it is evident how the effort to reach the understanding and attract the interest of the student has moulded the style and thought of the author.

In form the work partakes more of the character of an essay upon the theory and art of pharmacy, rather than that of a formal text-book, that is, the style is open and discursive, seeking not merely to present as many specific statements of fact in as small a compass as possible, but rather to develop a philosophical system that shall show the relations and interdependence of the several parts of the subject, and to construct something that shall approach to a logical classification of the subject matter of pharmacy, even if that classification is artificial and dependent upon the peculiar viewpoint of its inventor.

The book is well printed and bound and rather abundantly illustrated. Many of the cuts, however, are antiquated and poorly reproduced, though some of those illustrating the implements and processes of modern manufacturing pharmacy are of good quality.

The most evident fault of the work is the entire absence of an index, though this is partially atoned for by the presence of an unusually comprehensive table of contents.

J. H. BEAL.

TREATISE ON GENERAL AND INDUSTRIAL INORGANIC CHEMISTRY. By Dr. Ettore Molinari, Professor of Industrial Chemistry to the Society for the Encouragement of Arts and Manufactures, and of Merceology at the Commercial University, Luigi Bocconi, at Milan. Third Revised and Amplified Italian Edition Translated by Dr. Ernest Feilmann, B. Sc., Ph. D. F. I. C., with 280 Illustrations in the Text, one Chromolithographic Plate and Two Phototype Plates. Large octavo XVI+704 pages. Cloth, \$6 net. P. Blakiston's Son & Co., Philadelphia.

The immense strides made in the industrial applications of chemistry during the past quarter of a century have provided chemical teaching with fresh inspiration and have imparted to it a new direction.

If formerly there was a sufficient excuse for the teaching of "pure chemistry" divested of all reference to its practical applications, this excuse has been greatly lessened, if not entirely removed. Whether chemistry is pursued as a cultural study merely, or as a part of the preparation for a professional vocation, the student will fall far short of deriving the full benefit of his labors if the general subject be divorced from ample and frequent consideration of its practical applications.

The above views form the groundwork of the plan of Dr. Molinari's treatise, which may be regarded as an attempt to develop the theories and principles of inorganic chemistry from the industrial and practical standpoint, i. e., instead of considering the science independently of its practical applications, or making only brief and occasional reference to them, its industrial and professional applications furnish a foundation for the consideration of the science.

In the art of imparting instruction there is no factor more important than the enlisting of the student's sympathy in his subject as an assistant to his purely intellectual efforts, and there is no more potent method of enlisting this sympathy than by showing him the use and importance of his subject in the world's life which he is preparing to enter.

Considered from this standpoint alone, Dr. Molinari's treatise must be regarded as a noteworthy and valuable contribution to the list of college text-books on chemistry.

Of course, no chemical treatise that is not encyclopedic in compass can be said to approach completeness, but the treatise under review can be fairly said to include the major portion of the chemical facts and theories that can be profitably considered in a volume of its size and professed scope.

In cases where the views or explanations of the author are not likely to meet with general acceptance by chemists, the translator has also assumed editorial functions, and has interpolated appropriate comments that add materially to the usefulness of the volume.

The illustrations are sufficiently numerous. Most of them are good, and many of them are new in texts printed in English. The paper, type and binding are satisfactory, and the volume is a fair sample of the bookmaker's art as exemplified in college text-books.

J. H. BEAL.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

GUAIACOL- AND CREOSOL-ACETIC ACIDS AND SOME OF THEIR DERIVATIVES.

ALFRED R. L. DOHME AND H. ENGELHARDT, BALTIMORE, MD.

The attention of chemists and physicians has for years been directed upon creosote from beechwood tar, and in particular upon the principal ingredients of the same, guaiacol and creosol, and their value in the treatment of tuberculosis has been generally admitted. It has been shown by several investigators that creosote is a general and effective germicide, and its therapeutic value is dependent largely upon this fact, as it will kill bacilli wherever it comes in contact with them in the system. Creosote possesses other virtues as a medicinal agent, such as stimulating the secretions and increasing the appetite, but these belong more properly to a therapeutic treatment of the subject. Buchholtz has shown that creosote is at least four times as effective a germicide as phenol; so that, other things being equal, it would naturally be preferred to the latter. Besides its direct germicidal effect, creosote possesses the undesirable property of irritating the mucous membrane of the stomach, and so pronounced is this effect that it is sufficient to practically prevent its use as such internally. It was, therefore, the aim of the chemists to produce compounds of creosote or its chief constituents, guaiacol and creosol, which are non-irritating, and which were easily split up in the system into their components, and which consequently retain their full germicidal power.

Numerous preparations have been manufactured, such as duotal, creosotal, guaiacol phosphate, benzoate, salicylate, cinnamate (styracol), camphorate (guacamphol), thiocol, aethakol, guajacatin, etc.

More than fifteen years ago experiments were carried out by us in order to produce compounds of guaiacol and creosol, which possessed the above mentioned properties, and as a result of these investigations the products described below were obtained. Although in the meantime some of these compounds have been manufactured and described by other investigators, we thought it to be of interest to give a short account of these products, the more so as some of them were obtained by a process differing from that given in this paper, and as the description of these products is rarely found in the literature.

The guaiacol or creosol radicals were introduced into the acetic acid radical, and from the resulting substituted acids, the various salts, esters, and amides were prepared. Unfortunately, these substances, as we found out later, have therapeutically little value, since the guaiacol or creosol, unlike in those esters of

organic or inorganic acids, in which these compounds figure as alcohols, is split off only partially.

*Guaicol-Acetic Acid.*¹ $C_6H_4 \begin{smallmatrix} \diagup OCH_3 \\ \diagdown O.CH_2.COOH \end{smallmatrix}$

By adding 125 parts of guaiacol to a mixture of 95 parts of monochloracetic acid, and 80 parts of sodium hydroxide in about half a liter of water, and boiling the mixture for some time, the originally alkaline solution will turn acid, indicating that partial saponification or hydrolysis of the product takes place. The yield of this method, therefore, is not very satisfactory, and we found the following process preferable: Neutralize a mixture of water and 125 parts of guaiacol by adding just enough sodium hydroxide to form sodium guaiacolate, and do the same with a mixture of water and monochloracetic acid to form sodium monochloracetate. Mix both solutions and add enough water to make the liquid measure one liter. Then add caustic soda solution to make the mixture slightly alkaline. The mixture is heated to boiling for about four hours in a balloon flask supplied with a reflux condenser. The solution, which will not turn acid under these conditions is cooled and treated with an excess of hydrochloric acid, when the guaiacol-acetic acid separates out as a light brown colored oil, which soon solidifies. To remove uncombined guaiacol, the acid is treated with a solution of sodium carbonate, and then shaken out with ether. After separating the ethereal solution, the aqueous solution is acidified, and the precipitated guaiacol-acetic acid collected. It is then dissolved in much warm water, when on cooling it crystallizes out in the form of long, fine white needles, which melt at 121°, and decompose by continued heating with water into guaiacol and acetic acid. It is readily soluble in alcohol, ether, benzene, and chloroform.

The sodium salt of guaiacol-acetic acid crystallizes from water in white needles and is readily soluble in water, while the corresponding potassium salt which also crystallizes in white needles is rather difficultly soluble in water.

Copper guaiacol-acetate, $(C_7H_7O_2.CH_2.CO O)_2 Cu$, crystallizes from water in fine blue needles.

Lead guaiacol-acetate, $(C_7H_7O_2.CH_2.CO O)_2 Pb$, is difficultly soluble in water, and crystallizes in wart-like masses of colorless needles.

Silver guaiacol-acetate, $(C_7H_7O_2.CH_2.CO O) Ag$, crystallizes from water like the lead salt and is quite sensitive to light.

*Creosol-Acetic Acid.*² $C_6H_3 \begin{smallmatrix} \diagup CH_3 \\ \diagdown OCH_3 \\ \diagdown O.CH_2.CO OH \end{smallmatrix}$

This acid is formed by a similar method as was used in making guaiacol-acetic acid, viz., heating a mixture of the sodium salts of monochloracetic acid and creosol in solution, with a slight excess of caustic soda. About 10 percent of the creosol is not acted upon and may be recovered as such. After boiling the mixture for several hours, then cooling and acidifying it, the creosol-acetic acid is precipitated and recrystallized from hot water. It forms long white needles which melt at 108°, and are sparingly soluble in water though readily soluble in the usual solvents.

¹Manufactured by Elberfeld Farbenfabriken in Germany, and covered by D. R. P. 85,490. Also obtained by Auwers and Haymann by saponification of the ethylester (B. B. XXVII, 2804).

²Manufactured by Lederer and covered by D. R. P. 83,538.

Potassium creosol-acetate forms long fine white needles when crystallized from water. It is readily soluble in hot water, though difficultly soluble in alcohol.

The copper salt is difficultly soluble in water from which it crystallizes in blue wart-shaped crystals. The lead salt which crystallizes similarly, is readily soluble in water. The silver salt crystallizes in groups of needles and lamellæ, is soluble in water, colorless, and quite sensitive to light. It may be of interest to mention that the lead and copper salts of both guaiacol- and creosol-acetic acids have low melting points.

*Guaiacol-acetic acid ethyl ester.*³ $C_6H_4 \begin{smallmatrix} \diagup OCH_3 \\ \diagdown OCH_2COOC_2H_5 \end{smallmatrix}$

By adding to guaiacol-acetic acid about five times its weight of absolute ethyl alcohol, and passing dry hydrochloric acid gas through the solution or by heating the above mixture of the acid and alcohol with concentrated sulphuric acid (about one-third of the weight of the guaiacol-acetic acid taken) for five hours, this substance is formed. On pouring the mixture into a large volume of cold water, the ester will separate as a light yellow colored heavy oil, which, when redistilled boils at 270-271°. It possesses a pleasant cinnamon-like odor, is insoluble in water, and easily soluble in alcohol and ether.

Creosol-acetic acid ethyl ester. $C_6H_3 \begin{smallmatrix} \diagup CH_3 \\ \diagdown OCH_3 \\ \diagdown OCH_2COOC_2H_5 \end{smallmatrix}$

This compound was prepared similarly to the guaiacol compound and was found to possess a similar but more distinct, pleasant, aromatic odor, and the same solubilities and color. It boils at 276-277°.

*Guaiacol-acetic acid amide.*⁴ $C_6H_4 \begin{smallmatrix} \diagup CH_3 \\ \diagdown OCH_2CONH_2 \end{smallmatrix}$

If the above-described guaiacol-acetic acid ethyl ester is shaken continuously in a well-cooled bottle with an excess of concentrated ammonia water (35 percent NH_3) for about fifteen to twenty minutes, and then allowed to stand, the oil will be changed to a mass of white needles of guaiacol-acetic acid amide and the contents of the bottle will become a solid crystal cake. As the rapid formation of the amide is apt to cause some of the uncombined oil to be included in masses of the former, it is desirable to frequently break these masses of needles up by means of a stirrer or glass rod until no more lumps or masses are observed. It was often found necessary to rub these masses up in a mortar to insure complete conversion into the amide, and the best yields were obtained if the reaction was allowed to continue for about twenty-four hours. The crystals of the amide were filtered off, washed with cold water to remove the excess of ammonia, and recrystallized from hot water, using an excess of water to prevent the amide from separating out as oil, which it will do if too little water has been taken for dissolving it. If all the ammonia is not removed by washing with cold water, some of the amide will be saponified when it is heated with the water for recrystallization. It crystallizes in fine white needles arranged in fan-shaped clusters and melts at 138°. It is soluble in hot water, alcohol, and ether, and is colorless and tasteless.

³Obtained by Auwers and Haymann by the action of sodium guaiacolate on monochloroacetic ester (B. B. XXVII, 2804).

⁴Manufactured and covered by D. R. P. 108,342 by the Actien Ges. fuer Anilinfabrikation, Berlin. Obtained by the action of chloracetamide on sodium guaiacolate.

The amide is saponified by moderate heating with solutions of caustic alkalies.

Creosol-acetic acid amide. $\text{C}_6\text{H}_3 \begin{array}{c} \diagup \text{CH}_3 \\ | \text{OCH}_3 \\ \diagdown \text{O} \cdot \text{CH}_2\text{CONH}_2 \end{array}$

This substance is prepared from creosol, just as the guaiacol-acetic acid amide is prepared from guaiacol, and crystallizes from warm water in fine white needles, which are odorless and tasteless. Its melting point is 127° and like the guaiacol-acetic acid amide it is saponified by caustic alkalis. Its solubilities are the same as those of guaiacol-acetic acid amide.

Below we append a tabular statement of some of the compounds of the various phenols with monochloroacetic acid and their melting or boiling points:

	M. P.	B. P.
Phenol acetic acid.....	96°	285°
Phenol acetic acid ethyl ester.....		251°
Phenol acetic acid amide.....	101.5°	
α -Naphthol-acetic acid.....	190°	
α -Naphthol-acetic acid ethyl ester.....	173°	
α -Naphthol-acetic acid amide.....	155°	
β -Naphthol-acetic acid.....	$151/152^\circ$	
β -Naphthol-acetic acid ethyl ester.....	$48/49^\circ$	
β -Naphthol-acetic acid amide.....	147°	
Thymol-acetic acid.....	148°	
Thymol-acetic acid ethyl ester.....		290°
Thymol-acetic acid amide.....	$96/97^\circ$	
Guaiacol-acetic acid.....	121°	
Guaiacol-acetic acid ethyl ester.....		$270/271^\circ$
Guaiacol-acetic acid amide.....	138°	
Creosol-acetic acid.....	108°	
Creosol-acetic acid ethyl ester.....		$276/277^\circ$
Creosol-acetic acid amide.....	127°	

We have also prepared the corresponding compounds of purified creosote from beechwood tar. We have made thus, creosote-acetic acid, its ethyl ester and its amide, all of which are mixtures and possess the same properties as those of the compounds which constitute them.

RESEARCH LABORATORIES OF SHARP & DOHME, Baltimore, June, 1912.

ESTIMATION OF IRON IN REDUCED IRON.

O. E. WINTERS.

Many methods for the determining of iron in reduced iron have been devised in recent years. In reviewing the various processes offered, opinion seems to be about equally divided as to whether the percentage of the total iron or of the metallic iron shall be taken as standard by which the value of reduced iron is to be gauged.

For estimating the total iron, the method which is described in the text of the Dutch, German and Italian Pharmacopœias stands out most prominently. In this process the iron is dissolved in acid, the resulting ferrous salt oxidized with potassium permanganate and the ferric salt estimated iodometrically in the usual way.

For the estimation of metallic iron only, the mercuric chloride method as given

in the Swiss, Belgian and Swedish Pharmacopœias and in Krauch Merck, "Chemical Reagents, their Purity and Tests," 1907, page 116, and the iodometric method described in the United States, Austrian, and Japanese Pharmacopœias are applied. The French Codex gives a gasometric method; the British Pharmacopœia, one in which the iron is mixed with copper sulphate and the ferrous salt formed is titrated with standard bichromate solution; the Danish Pharmacopœia, one in which the iron is acted upon by ferric chloride in an atmosphere of CO_2 in order to prevent oxidation, titrating the resulting ferrous salt with standard permanganate solution. The Hungarian Pharmacopœia simply directs to glow the iron in the air and weigh the oxide formed.

The requirements by the various Pharmacopœias are as follows:

Dutch	84.6% of metallic iron	Japanese	90% of pure iron
German	90% of metallic iron and 96.6% of total iron	British	Not less than 75% of metallic iron
Italian	98% of total iron	Danish	90% of metallic iron
Swiss	90% of metallic iron	Hungarian	80% of metallic iron
Swedish	90% of metallic iron	United States.....	90% of metallic iron

The methods in the different Pharmacopœias given in full are as follows:

Dutch Pharmacopœia: One hundred mgs. of iron are dissolved in 20 cc. of diluted sulphuric acid, then mixed with sufficient one-half percent potassium permanganate solution to produce a persistent pinkish color. After the excess of permanganate has been removed by a few drops of alcohol, 2 gm. of potassium iodide are dissolved in the solution and the mixture allowed to stand for one hour. The liberated iodine is then titrated with tenth-normal sodium thiosulphate solution, of which not less than 17.1 cc. should be used.

German Pharmacopœia: One gm. of reduced iron is dissolved in 50 cc. of diluted sulphuric acid, and the solution made up with water to measure 100 cc. Ten cc. of this solution are mixed with sufficient half percent potassium permanganate solution until a persistent pink color is produced. The excess of permanganate is removed by the addition of a few drops of tartaric acid solution. Two gms. of potassium iodide are then added and the mixture allowed to stand in a well-closed bottle for one hour. The iodine is then titrated with tenth-normal sodium thiosulphate solution, of which at least 17.3 cc. should be used.

Italian Pharmacopœia: One gm. of iron is dissolved in 25 cc. of diluted sulphuric acid and after solution has taken place the liquid is mixed with distilled water to measure 100 cc. To 10 cc. of this solution potassium permanganate solution is added until a pink color is obtained. The excess of permanganate is then removed by a few drops of alcohol, and after the addition of 1 gm. of potassium iodide in 5 cc. of water, the mixture is allowed to stand in a glass-stoppered bottle for half an hour at a temperature from 35° to 40° C. The liberated iodine is then titrated with tenth-normal sodium thiosulphate solution, of which not less than 17.5 cc. should be used.

Swiss Pharmacopœia: Five decigrams of reduced iron are added to the hot solution of 5 gm. of mercuric chloride in 50 cc. of water, the mixture heated for half an hour on a steam bath, shaking from time to time, and then allowed to

cool. The solution is made up with water to measure 100 cc. and filtered. Fifty cc. of the clear filtrate mixed with 10 cc. of diluted sulphuric acid should require at least 40.25 cc. of potassium permanganate solution to produce a persistent pink color.

Belgian Pharmacopocia: A mixture of 1 gm. of iron and a solution of 5 gm. of mercuric chloride and 50 cc. of water in a 100 cc. graduated flask is heated for 20 minutes on a water bath, shaking occasionally. After cooling, sufficient water is added to make the volume measure 100 cc. and the mixture allowed to settle. Ten cc. of the clear liquid are then transferred to a glass-stoppered bottle, mixed with 20 cc. of diluted sulphuric acid and then drop by drop a one-half percent solution of potassium permanganate is added until a faint but persistent reddish color is obtained. The excess of permanganate is then removed by the addition of a few drops of alcohol. Two gm. of potassium iodide are then added and after having the bottle well stopped the mixture is allowed to stand for one hour at ordinary temperature. The liberated iodine is then titrated with sodium thiosulphate solution, of which at least 14.3 cc. should be used.

Swedish Pharmacopocia: Five-tenths gm. of reduced iron and 5 gm. of mercuric chloride are dissolved in 50 cc. of boiling water, the mixture heated for a few minutes on a water bath, shaking occasionally, and after cooling, sufficient water is added to make the solution measure 100 cc. The mixture is then filtered and 25 cc. of the clear filtrate, after the addition of 10 cc. of diluted sulphuric acid, is titrated with tenth-normal potassium permanganate, of which at least 20 cc. should be used.

Krauch-Merck's Method: "One gm. iron is brought into a 100 cc. measuring flask, 10 gm. of finely powdered mercuric chloride and 50 cc. of boiling water are added and the mixture kept boiling on wire gauze over a small flame for five minutes, shaking frequently. The flask is then filled up to mark at once with cold water. After cooling to 15° C. the flask is filled up again to mark, shaken well and left standing well stoppered for settling. The solution is filtered and 10 cc. of the filtrate are titrated with 1/10 normal permanganate of potash solution, under addition of 10 cc. diluted sulphuric acid. At least 16 cc. should be used of the permanganate solution. In order to control this test, dissolve in the titrated solution 2 gm. of potassium iodide, leave stand stoppered for one hour at a temperature of 20° C., and then titrate with 1/10 normal hyposulphite solution using starch solution as indicator. One cc. of 1/10 normal potassium permanganate or 1/10 hyposulphite solution is equal to 0.00559 gm. metallic iron."

U. S. Pharmacopocia: (Text of this method well known.)

Austrian Pharmacopocia: Three-tenths gm. of reduced iron are well mixed with 10 cc. of potassium iodide solution and 15 dgm. of iodine under cooling. When solution has taken place, the volume is made up with water to measure 100 cc. Fifty cc. of the solution should require not more than 10.3 cc. of 1/10 normal sodium thiosulphate solution to render the solution colorless.

Japanese Pharmacopocia: Pour 10 cc. of potassium iodide solution on 0.3 gm. of reduced iron in finely powdered state and add gradually, under cooling and shaking, 1.5 gm. of coarsely powdered iodine; as soon as the iron and iodine have completely dissolved, dilute the solution to 100 cc. with water and set it

aside; titrate 50 cc. of the clear solution thus prepared with decinormal sodium thiosulphate solution, then not more than 10.3 cc. of the latter solution should be required for the complete decoloration.

French Codex: Five-tenths gm. of reduced iron is treated with diluted hydrochloric acid and the hydrogen is collected. In the case of pure iron, about 200 cc. of hydrogen should be obtained, measured under normal conditions of temperature and pressure.

British Pharmacopœia: If 0.25 gm. of reduced iron be added to a hot solution of 1 gm. of copper sulphate in 15 cc. of water, in a flask that can immediately be well corked, and the whole be shaken occasionally during ten minutes, the liquid, after being rapidly filtered with the minimum of exposure to air, and acidulated with sulphuric acid, should not cease to yield a blue precipitate with solution of potassium ferricyanide until at least 33.7 cc. of N/10 volumetric solution of potassium bichromate have been added.

Danish Pharmacopœia: Five-tenths gm. of the iron is heated in a 100 cc. graduated flask with 5 gm. of anhydrous ferric chloride in 50 cc. of boiled and cooled water. After cooling, the volume is made up with boiled and cooled water to measure 100 cc. and the mixture allowed to settle. Twenty cc. of the clear liquid, acidulated with 50 cc. of boiled and cooled diluted sulphuric acid, is titrated with tenth-normal potassium permanganate, of which at least 48 cc. should be used for every 0.1 gm. of reduced iron taken.

Hungarian Pharmacopœia: One gm. of iron is heated in the presence of air for about fifteen minutes, when 1.34 gm. of iron oxide should be obtained.

In examining the above methods I found that those given for estimating the total iron work very satisfactorily, but that those described for determining metallic iron are open to criticism. In the iodometric method, the accurate weighing and transferring of iodine is a tedious operation, and the iron has to be powdered very fine in order to be completely dissolved. Even after prolonged standing, a coarsely powdered preparation will not be entirely converted into ferrous iodide. I found when working under the best possible conditions that results obtained varied as much as 1.5 percent.

With the mercuric chloride methods as described above, the results obtained agreed very closely. I may mention, however, that the time allowed for heating on a water-bath is insufficient to completely dissolve the iron. Even when the heating under these conditions is prolonged, it is difficult to distinguish between the undissolved iron and the deposited mercury. The modified method as given in Krauch-Merck, in which it is directed that the mixture be heated over an open flame, not only shortens the time of the estimation by about one-half hour, but also insures the complete solution of the iron.

The gasometric method gives good results, but has the disadvantage of being troublesome in manipulation, and besides this, depends too much on physical conditions, i. e., temperature and air pressure.

The method described in the British Pharmacopœia, although giving results agreeing closely with those obtained by the mercuric chloride method, is, like all estimations in which the end point of the titration is found by spotting, subject to the personal equation.

INCREASE IN STRENGTH OF POTASSIUM HYDROXIDE
VOLUMETRIC SOLUTION ON STANDING.

A. H. CLARK, PH. G., CHICAGO, ILL.

During the course of the investigation on the keeping quality of standard volumetric solutions, and reported during the past three years, and also in practice as well, I noted a peculiar thing regarding the keeping of standard potassium hydroxide V. S.

While the facts, as related, may not be new to many of you, I have been unable to find a statement in the literature covering this particular point. On inquiry I have found but one chemist that has noted the same thing as I have regarding this solution. I believe that wider publicity should be given this important matter, and hence this brief note.

Both normal potassium hydroxide V. S. and fiftieth normal *increase* in strength materially on standing, the latter in particular. The data that I have is not complete, as it was some time before I could bring myself to believe that this is true, and some of the records were not preserved. One normal solution which I now have originally had a factor of 1.0235, and now has a factor of 1.0600. This is about two years old. Others have shown about the same increase, but the figures are not available. In the case of N/50 potassium hydroxide solution, the increase is more marked and rapid. I have seen a solution, 10 cc. of which would exactly neutralize two cc. N/10 acid increase in strength, on standing over night, until but 8.5 cc. were required to neutralize 2 cc. N/10 acid.

The explanation offered by the one chemist mentioned above was that the alkalinity of the glass was taken up by the solution. I am unable to offer anything further in the way of explanation than this. The character of glass from which the container is made may have considerable to do with it. The N/50 solutions, on which I noted such an increase, were kept in a 500 cc. volumetric flask, while the normal solutions were kept in a two-gallon amber bottle.

THE SAPONIFICATION OF FIXED OILS WITHOUT HEAT.

G. N. WATSON, LAWRENCE, KANSAS.

While determining the saponification number (Koettstorfer number) of several samples of linseed oil, I found it necessary to leave some of them over night before completing the operation. All of the samples had been treated with N 2 alcoholic KOH. (25 cc.). Some of them had been heated the prescribed half hour, and some had not. While titrating the samples with N 2 HCl the next morning, I titrated a few of the unheated samples before discovering my mistake. Upon redetermining the saponification values of these samples by the usual method, I was surprised to find that the results by both methods checked very closely.

Tests were made on a linseed oil, whose saponification value was known, to

determine whether saponification could be carried to completion within a length of time that would permit of the method being used in the determination of saponification numbers of oils. It was found that saponification began immediately and proceeded very rapidly during the first few minutes; that at the end of one-half hour, 9.8 cc. of N/2 KOH or 70 percent of the amount required for complete saponification (14 cc.) had been consumed; that at the end of two hours, 13.6 cc. or over 97 percent had been consumed in the process of saponification. At the end of five hours, 99.5 percent, and at or before the expiration of sixteen hours, saponification was complete, as was shown by the number of cc. of N/2 KOH used in the process and also by the fact that at the end of twenty, thirty-two and sixty-four hours, respectively, the same number of cc. of N/2 KOH were found to have been consumed.

To illustrate graphically, let the time, expressed in hours represent the ordinates and the number of cc. of N/2 KOH consumed, the abscissas. It will be noted that saponification is very rapid during the first thirty minutes and is nearly completed at the end of five hours, while at the expiration of sixteen hours or less, saponification is complete.*

To test the method still further, other fixed oils were saponified both with and without the application of heat. The results of the investigation are as follows:

CC. of N/2 KOH Consumed in Saponification of 2 cc. of Oil.

	Hot, ½ Hr.	Cold, 16 Hrs.
Lard Oil.....	15.64	15.64
Castor Oil.....	13.22	13.12
Exp. Oil of Almond.....	13.98	14.04
Oil of Poppy.....	13.83	13.83
Cocanut Oil.....	18.76	18.76
Olive Oil.....	13.93	13.93
Sesame Oil.....	13.78	13.73

A period of sixteen hours was allowed for the above saponifications in the cold. It will be noted that practically the same result was obtained by both methods.

A search of the literature on the subject of saponification in the cold developed the fact that Henriques (Annual Report, Connecticut Agr. Exp. Station, 1892, p. 30), worked out a process for the saponification in the cold of fats. His method is based upon the solution of the fat in petroleum ether, in which condition it is easily attacked by the alcoholic alkali. With those fats, which give easily volatile ethers it was found that the results by the cold process were somewhat higher than those by the hot process, due no doubt to the fact that the volatile ethers were driven off during the process of heating.

Where but a few determinations are to be made and the results are wanted at the earliest possible moment, the usual method of saponification by heat must necessarily be employed. However, when a large number of determinations are to be made and especially when the facilities for heating are limited, much time can be economized by letting the samples, after treating with alcoholic alkali, stand over night. The above results indicate that the operator may rest assured of the proper saponification values.

UNIVERSITY OF KANSAS.

*The drawing furnished with this paper could not be reproduced.—EDITOR.

THE OLEORESIN OF *PSEUDOTSUGA TAXIFOLIA*.

O. A. BEATH, AND EDWARD KREMERS, PH. G., PH. D., MADISON, WIS.

It is a sad comment on American pharmacy that the question as to what is the botanical source of Oregon balsam should not yet have been solved. Thanks to the kind cooperation of the Forest Products Laboratory located at Madison and of the field men in the state of Oregon, another attempt at a distance has been made. Owing to a misunderstanding, the oleoresin supplied had been obtained by boring into the trunk of the trees rather than by collecting the oleoresin secreted in the pustules of the bark. While the results of the preliminary chemical study recorded in the paper do not solve the problem of Oregon balsam, they are of some slight phytochemical value. Continued cooperation having been promised by the Bureau of Forestry, this and other problems are to be taken up in the future.

A CRYSTALLINE ACID FROM THE OLEORESIN OF THE DIGGER'S PINE.

O. A. BEATH AND EDWARD KREMERS.

The oleoresin of *Pinus sabiniana* is of interest not only because of the heptane which constitutes the bulk of the oil, but also because of the difficulties which the resin has offered in the study of the oleoresin. Thus far no crystalline resin acid had been obtained. Even fractional precipitation of the resin acids by means of the sparingly soluble lead salts and the decomposition of the lead salts by either hydrogen sulphide or sulphuric acid yielded no crystalline products. However, when hydrogen chloride was used to set free the acid from its lead salt a crystalline acid was obtained. This will be described later. For the present it may suffice to call attention to this modification in technique since it may be expected to yield results in other instances where the older methods have failed. It should be added that fractional distillation under diminished pressure yields not only a hard, clear resin such as has not been obtained previously from Digger's pine, but a crystalline resin acid as well.

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

TO WHAT EXTENT SHALL POWDERED DRUGS BE RECOGNIZED IN THE NINTH REVISION OF THE PHARMACOPŒIA?

C. M. STERLING, A. B., LAWRENCE, KANSAS.

The increasing proportion of vegetable drugs which occur in the market in a ground or pulverized condition, and the ready and extensive adulteration which has been practiced in the handling of drug powders is more or less familiar to all who are interested in the revision of the Pharmacopœia. Having had access to the work of the Sub-committee on Botany and Pharmacognosy for the ninth revision of the Pharmacopœia, the writer after a somewhat detailed study of the proposed text on powdered drugs is convinced that the subject is worthy of greater consideration than it has thus far been accorded.

That our knowledge of the histology of vegetable drugs has been greatly increased during the last decade can be demonstrated readily by an examination of the present-day text-books and other works on pharmacognosy. And the marked improvement in courses in plant histology, and in the examination of powdered drugs and foods offered by our schools and colleges of pharmacy show the rapidity with which this knowledge is being disseminated. From all quarters the Committee of Revision has received recommendations that powdered drugs be recognized in the Ninth Revision of the Pharmacopœia. And various branches of the American Pharmaceutical Association, faculties of colleges, and teachers of pharmacognosy have all joined in urging a fuller recognition of drugs in powdered form. Conditions such as these indicate the need for advancement of the Pharmacopœia in this direction. That the Committee of Revision has recognized this need, and decided to give powdered drugs a conspicuous place in the forth-coming revision, is evidenced by its adoption of the "General Principles to be Observed in the Ninth Revision of the United States Pharmacopœia, as suggested by the American Pharmaceutical Association" (circular 11, page 59), from which the following references are taken:

11. Standards for Powdered Drugs.—That titles and standards be introduced for such drugs as are properly used in the ground or pulverized condition and where the standards for the whole are not applicable to the powdered drug.

13. Pharmacognostic Descriptions.—That with the description of a crude drug, brief pharmacognostic descriptions, both macroscopic and microscopic when possible, be given, also the appearance of the structural elements in the powder, when examined microscopically, as a means of detecting adulteration.

17. Powdered Drugs.—The powdered drugs to represent the entire drug.

When the drug can be powdered without residue this should be required; in other cases the allowable tailing or residue should be determined.

If we keep in mind the idea that the Pharmacopœia will become a legal standard, it is evident that many points never previously considered will present themselves for consideration, and that definitions and descriptions must be more carefully and accurately drawn than ever before. It then becomes a question of prime importance for consideration: How far can the Committee of Revision safely go in describing the structural elements of powdered drugs when examined microscopically?

Of the many recommendations which have been made to the Committee of Revision none is specific in character. The writers have for the most part contented themselves with recommending that powdered drugs be recognized, and that their descriptions "be of practical value," and expressed in "terse, accurate, and concise" language. Rarely has any one expressed, even remotely, a method of procedure.

One writer on this subject has suggested the introduction of "terse and accurate statements wherever possible and of practical value in identifying the drug or detecting adulterations"; and also "methods of preparing sections and powders, stains and micro-chemical reagents for such purposes." Another has recommended that "powdered drugs be recognized in the next revision, and that they be concisely described, certain of their elements being designated by italicization or otherwise as identifying characteristics."

All will agree, I think, with these suggestions, that the descriptions shall be "terse, accurate, and concise and used wherever of practical value"; but the question of how far the Committee shall go is an open one, and one upon which opinions may well be at variance. Shall powdered drugs remain, as they appear in the present text, merely appended to the descriptions of the whole drugs, or shall they be given more conspicuous recognition and be placed upon a footing equal with that of the whole drugs?

Let it be said, in passing, that "methods of preparing sections and powders, stains and micro-chemical reagents," have no place in the Pharmacopœia. Work of that sort may well be left to the text-books; and it cannot be expected that the Pharmacopœia shall displace the dispensatories.

It must be conceded that, as the text stands, the treatment is much more liberal than that accorded by the pharmacopœia of any other country, still it is wholly inadequate to the subject. Drug powders are not given the prominence which their importance warrants; the descriptions frequently are too brief, and they are not coordinated properly with the preceding portions of the text.

According to the present arrangement the official definition is followed by a description of the whole drug, and then appended, seemingly, as an after-thought is a description of the powder, of which no mention has been made in any part of the preceding text. When introduced in this way, the exact relation of the powder to either the definition or description of the whole drug is somewhat difficult to determine.

To illustrate the point in question let Aconite be taken as an illustration:

Aconite is defined as "the dried tuberous root of *Aconitum napellus* Linne (Fam. Ranunculaceae): to which may be attached the portion of the stem-base

not exceeding 2 cm. in length, and yielding," etc. It is described as "more or less conical or fusiform, 4 to 10 cm. long, 1 to 2 cm. in diameter at the crown; externally dark brown or grayish-brown, smooth or longitudinally wrinkled, the upper portion with a bud, etc.

Then follows a description of the powder: "Powder grayish-brown, with numerous spherical somewhat plano-convex, and 2 to 5 compound starch grains, the individual grains being 0.003 to 0.015 mm. in size; tracheae mostly with slit-like simple pores, sometimes with spiral or reticulate thickenings or with bordered pores," etc.

What has this description of the powder to do with either the official definition or description, which have been concerned entirely with the whole drug? Is there a proper correlation between the official definition and the description of the powder? And what standing would the powder have if it were considered as a legal standard? Let us suppose, for example, it were necessary to state that the entire root of Aconite could not be pulverized and that a certain amount of residue were allowable. Would not such a statement in connection with the powder weaken the description, and make it appear inane, or even ludicrous when the official definition had specifically included the whole root?

If drug powders are to occupy the position which their importance warrants, it is evident that some method essentially different from that of the proposed text must be adopted. There are two methods of procedure which suggest themselves.

One is to change the official definition so it will include the powder. By this plan the definition of *Aconitum* would read as follows: The dried tuberous, root whole or powdered, of *Aconitum napellus*, etc. Then after the definition would follow the description of the whole drug, and after that the description of the powder. This method, while wanting somewhat in accuracy, has the commendable merit of brevity and conciseness, and cannot be objected to on the ground that it will add materially to the text. And it can be introduced with but little change in the text already submitted by the Committee.

The other method is suggested by paragraph 11 of the "General Principles to be Observed in the Ninth Revision," which reads, "That titles and standards be introduced for such drugs as are properly used in the ground or pulverized condition and where the standards for the whole are not applicable to the powdered drug." Let this general principle be extended to include all drug powders, and have each powdered drug appear under its own separate and distinct title. Then Aconite Powder for example would appear as "*Aconiti Pulvis*."

It will be urged against this method that it is cumbersome and requires considerable repetition. On the other hand it has some distinct advantages which more than off-set these objections. It directs especial attention to drug powders, and puts them on an equal footing with whole drugs. By this method, definitions can be made accurate and specific, and any qualifying or limiting statements in the description may be made to harmonize perfectly with the definition. By adopting it the committee would add materially to the value of the Pharmacopœia as a book of standards, and give proper recognition to a subject of steadily increasing importance.

SUGGESTIONS RELATIVE TO STANDARDS AND METHODS OF ANALYSIS.

L. F. KEBLER, CHIEF OF DRUG DIVISION, BUREAU OF CHEMISTRY.

The work during the past few years has shown the great need of more concerted cooperative and fundamental investigations. There has been a dearth of available workers. There is a great need of studying analytical methods with a view of determining what degree of accuracy can be obtained by workers either in the same or different laboratories. The Pharmacopoeia prescribes specific standards for certain drugs and indicates standards for others. In many instances these specific standards have been found wanting; for example, the standard for *cannabis indica* states specifically that the powder shall contain few or no stone cells, which means a virtual absence of seeds. In practice it has been found exceedingly difficult to put this standard in force for the simple reason that very few samples available on the market are free of seeds to the extent prescribed. Furthermore, information is lacking as to just what amount of seed should or should not be permitted.

Another feature is that certain of the methods do not give satisfactorily concurrent results in the hands of different workers; for example, the method prescribed for determining the alkaloidal matter in *hyoscyamus* is liable to a variation of 100 percent in the hands of different workers, and naturally with such a great variation as this it would be difficult to use the method to advantage. The chief difficulty with the method appears to be insufficient time and solvent to properly extract the alkaloidal material from the powdered plant. Similar difficulties of the above character can be referred to, but these are sufficient to indicate the shortcomings of certain prescribed standards.

Attention is now called to the standards that are indicated but not specifically prescribed. Such standards, for example, as to the amount of alcohol present in a finished product made according to prescribed formula, or the amount of extractive or other factor that may contribute to the value of determining the quality of the commodity. For example, the Pharmacopoeia prescribes a method for manufacturing tincture of *capsicum*, but no definite statement appears as to the amount of alcohol that should be present in the finished product. Neither is there any reference made as to the amount of matter that might possibly be present in a preparation made as directed by this authority. This feature is a most important one, because it is well known that alcohol (95 percent) in many instances extracts far less material than does a solvent containing more water. This feature is recognized by most manufacturers and taken advantage of.

In a paper communicated to the Association of Official Agricultural Chemists last year by Mr. Street on the subject of ginger extracts, attention was called to the fact that menstrua containing smaller amount of alcohol than that contained in the ordinary alcohol removed considerable more extractive matter than does 95 percent alcohol. The writer has conducted experiments on tincture of ginger which corroborate the findings of Mr. Street in this particular.

In this connection it might be well to call attention to the well-known fact that the examination and investigation of food and drug problems frequently

overlap each other, and if it were possible to arrive at some plan whereby the efforts of the investigators of subjects that have to a certain extent a common basis could be correlated, it certainly would be most desirable. Such a plan would eliminate so-called double standards in many instances.

Many of the present standards for crude drugs make no provisions whatever for the presence of certain incidental or accidental foreign material that is usually present in these products. In the past such foreign material has constituted a goodly percentage of the product; for example, *uva ursi* has been offered for import containing in excess of 40 percent of stems, foreign material, worthless leaves, etc. The excuse offered by the importer for the character of the product was that the commodity is intended to be used in the manufacture of cattle powder or veterinary remedies. Steps have been taken to reduce the percentage of such foreign material imported. In fact, certain importations have been permitted to be released only on condition that the importer would eliminate excessive amount of foreign material. An excellent example where this requirement can be put into practice is the foreign material contained in cubeb berries. There is no excuse whatever for having in cubeb berries more than 5 percent of foreign material. Such foreign material as is commonly met with in this commodity can easily be eliminated by mechanical means. Experience has furthermore shown that it will be necessary to prohibit the importation of commodities containing excessive amount of foreign material, if it is expected to supply the pharmaceutical and medical professions with agents with which to treat the unfortunate sick to the best advantage. In the past certain goods have been released on condition that they be marked, indicating the nature and character of the impurities present, but it subsequently developed that these goods were supplied on orders without indicating to the purchaser that fact that the article was not of the proper character. Such transactions frequently resulted in the second dealer finding himself in conflict with the law. Furthermore, such goods are at times shipped into interstate commerce with the proper marking on same, but after they have entered the borders of a state the original package is broken and the consuming public is at the mercy of the dealers, unless state officials come to the rescue. It is hoped, therefore, that the state officers charged with the supervision of the enforcement of the drug laws will take an active interest in these matters.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

THE NEED FOR UNIFORMITY IN LAWS REGULATING THE SALE AND USE OF POISONS AND NARCOTICS.

M. I. WILBERT, PH. M., WASHINGTON, D. C.

There are but few problems at the present time that are more deserving of immediate and careful consideration than the loss of life and health due to readily preventable acute or chronic poisoning, accidental or otherwise.

While it is true that the undermining of the health of operatives in hazardous or specially dangerous occupations is a problem that is only beginning to attract the attention of economists and sanitarians, there is even now sufficient evidence available to demonstrate that occupational diseases due to the constant ingestion of poisons or the inhalation of poisonous gases, are much more common than was formerly supposed, and are, in fact, the causative factors for an appreciable portion of the morbidity observed among the employes in various industries.

While the several chemical industries have long since been recognized as being specially hazardous, so far as occupational intoxications might be concerned, there is another phase of the poisoning problem for which the drug business as at present constituted, is largely, if not entirely responsible. This more evident phase of the problem is reflected by the number of deaths annually recorded as being due to the ingestion of poisonous substances, and by the untold hundreds, if not thousands, of lives that are annually wrecked by narcotic or habit-forming drugs other than alcohol.

While we have, as yet, no authoritative figures on the actual number of drug habits in this country, it is generally acknowledged that the number is much larger than need be and is rapidly increasing because of the ease with which habit-forming drugs can be obtained.

This widespread use of habit-forming drugs, particularly opium, is discussed at some length in two recent messages from the President of the United States to the Senate and House of Representatives (S. Doc. 61st Congress, Nos. 377, 736), and the conditions outlined in these several messages, with other evidence that has accumulated, will, no doubt, tend to bring about the enactment of radical if not drastic laws for controlling the traffic in narcotic or habit-forming drugs of all kinds.

Just what the nature of this legislation is destined to be it would be futile to attempt to outline at this time, but of one thing we can be assured, and that is, that the problem will not be considered as being finally disposed of until it has

been solved in such a way that the sale and use of narcotic drugs is effectually controlled at every point.

Theoretically, it should be possible to control the sale and use of narcotic drugs by means of any one of a number of the laws now in force, but practically, owing to the variability of the laws on the statute books of the several states, the better laws are inoperative because of the absence of laws, or the inefficient nature of the laws in the neighboring states.

The possible influence of the variability in the requirements of the several laws is emphasized by the fact that while we find some form of cocaine legislation on the statute books of 53 of the political divisions included in the United States, only 20 of the states make it unlawful for physicians to prescribe for habitual users, and only seven states make it unlawful, for others than those specifically authorized, to have cocaine in their possession.

Forty-five of the states or political divisions have laws restricting the sale or use of opium or its derivatives, but the greater number of these laws are so burdened with provisos and exceptions as to make them almost valueless from a practical point of view.

Much the same conditions prevail in regard to the laws designed to restrict or control the sale and use of poisons other than narcotics, with the possible exception that the available mortality statistics offer additional argument to emphasize the need for enforcing existing restrictions and for elaborating or amending the present laws so as to make them both uniform and practical.

A review of the mortality statistics for 1910 shows that the number of suicides by poison, in the registration area, totaled 2456. This already large number, when augmented by 1384 deaths from accidental poisonings, other than those from occupational poisons and the inhalation of poisonous gases, gives a total of 3840 deaths largely, if not entirely, preventable by efficient laws, actively enforced.

As with the anti-narcotic laws the reason for the general laxity in the enforcement of the provisions of the laws designed to restrict the sale of poisons is to be sought in the differences that exist in the laws as they occur in the several states and the impracticability of enforcing statutes that include requirements unusual or uncommon in the laws of other states.

Some idea of the variability existing at the present time can be had from the fact that of the 54 existing laws 53 require some form of poison label, 13 require statements regarding antidotes, 45 require registration for certain poisons, 27 require that the seller satisfy himself that the buyer is aware of the poisonous character of the substance and the law of one political division, the Canal Zone, restricts the sale of all poisons, except disinfectants, to prescriptions or requisitions signed by a physician.

These differences are further emphasized by the existing variation of opinion as to what is a poison? Some 18 or more of our state laws include definitions of the term that vary from the bare statement: "Any deadly poison" to "Any drug, chemical or preparation, which according to standard works on medicine or *materia medica* is liable to be destructive to adult human life in quantities of 60 grains or less."

No less than 42 of the laws include a more or less comprehensive enumeration of the articles considered to be poisonous. These several schedules contain upwards of 163 titles only 23 of which occur in 20 or more of the several laws, while 36 of the titles are found in but one of the laws.

The problem is further complicated by the fact that up to the present time we have no systematic records of the frequency with which certain poisons are used or of the number of deaths attributable to any certain substance.

The seventy-third annual Report of the Registrar-General of Births, Deaths and Marriages in England and Wales includes an enumeration of the deaths from various poisons, so far as known. This list (for 1910) contains a total of 60 or more titles and is particularly interesting in that it suggests the constant variability in the nature of the poisons used and the consequent need for accurate information on the subject. Of the titles enumerated in the above list no less than eight are not found in the schedules of any of our state laws. Some at least of the articles are not ordinarily considered as being poisons. Thus the English list includes fifteen deaths from the use of veronal, ten deaths from the use of sulphonal, and five deaths from the use of camphor and its preparations indicating how difficult it is to determine what is to be considered as a poison and suggesting the desirability of safeguarding or restricting the sale of various articles from time to time.

To even the cursory students of our American poison and narcotic laws it must be evident that we are in this respect as in many others suffering from a lack of coordination or uniformity in the requirements of the several states thus making it extremely difficult if not altogether impossible to enforce the laws of one state without imposing unnecessary hardships on, or placing a premium on the ignoring of the existence of the law by the citizens of adjoining states.

Considering the multiplicity of the problems that are involved it appears to me desirable to provide for:

1. A careful comparative study of existing legislation, on the part of all who should be interested in the subject, so as to determine the reasons for the evident inefficiency of the present laws.
2. Consistent and persistent efforts to secure uniform and practical legislation in the several states so as to effectually restrict the sale and use of poisonous and habit forming drugs.
3. The compiling of accurate and reliable information in regard to substances used as poisons and the nature and kind of substances used by so-called drug-habitués.
4. The compiling of accurate information in regard to the extent of drug habituation.
5. The securing of legislation, federal or state, that will actually and effectually control the manufacture, sale and use of all drugs that are used to destroy human life or which tend to engender the habitual use of the substance to the detriment of the user.

PAST, PRESENT AND FUTURE PHARMACY LAWS.

JAMES F. FINNERAN, BOSTON, MASS.

It would be well nigh impossible for any one to cover in one short paper all the pharmacy laws that are or have been upon the books of our various states.

There are certain inconsistencies, however, between the laws of the various states that I believe should be corrected.

In my humble opinion the start must be made in our national drug organizations, and why? Because the most of us have only a limited knowledge of just what is being done in our sister states, and have not the facilities of knowing exactly what the laws are on a given subject in other states. National organizations like the A. Ph. A. have the facilities for getting this information.

It seems perfectly clear to me that boards of pharmacy should have full and complete supervision of the handling and sale of drugs.

Now in many states the collecting of samples of drugs and the analysis of the same are made by either Health Boards, Food and Dairy Commissions, etc. This is a mistake in "past legislation" under which we are working at present and should be corrected in the "future."

Many times persons are prosecuted for selling drugs below the standard, but the effect stops right there. If boards of pharmacy had the proper laws to back them up we would all sell good drugs, or not be allowed to stay in the business. Again it is generally supposed that only registered pharmacists can carry on the business of pharmacy, and I believe that is the intent of our pharmacy laws.

But what are the facts in the case? Simply this, that in practically every state, if not in all, any person can conduct a pharmacy, if he has the price, regardless of whether he is a registered pharmacist or not. He simply incorporates the business and puts a registered pharmacist in as manager. The manager supposedly has an interest in the business, but if he does, it is infinitesimal, when compared with the business as a whole. Getting right down to facts, we are going to do one of two things. Either we shall insist that registered pharmacists only may carry on the business, or continue to allow any one who pleases to conduct a pharmacy. Our duty in this matter must be perfectly clear to all.

The sale of spirituous or malt liquors by pharmacists is another matter of great importance. Shall we sell them as medicines or commodities? There are nearly as many ways of handling these goods by pharmacists as there are states.

I think you will agree with me that this part of our business should be carried on practically the same in all parts of the country. The same comment holds good in regard to the sale of poisons. Another subject of great importance is the sale of narcotics. Shall they be sold as medicines or as commodities, and under what conditions? As in the sale of liquors many states have laws governing such sales which differ greatly from their sister states.

I have mentioned the above matters so that your attention would be more closely drawn to what I have in mind in regard to the laws of the future.

It seems to me that the laws governing the sale of drugs are of vital importance to the manufacturer, wholesaler and retail dealer, for if the retailer is not suc-

cessful then assuredly the other two branches cannot be. There must be a reasonable and honest understanding between the men who carry on the various branches of our business, else there will be endless quarrels and misunderstandings. Let us all get together on this proposition and try and find common ground to work upon. Retailers understand their part of the business better than any one else, and this is equally true of the other branches.

There has been a very strong effort made during the last five years to *restrict* the sale of many articles sold by pharmacists.

I want to say right here that no honest pharmacist ever objected to restrictions that were for the public good. But there are a lot of so-called reformers, whose intentions I am willing to admit are good, who would put such restrictions on us that it would drive seventy-five percent of us out of business. These are not the sort of laws that honest pharmacists desire. What has been accomplished in the way of legislation during the last five years to enable pharmacists to carry on their business in a more lucrative manner? I will leave the answer for you to decide.

Now, what is to be done along the line of bettering our conditions as pharmacists? This question must be answered by men from all parts of the country who will study the question thoroughly and then act upon their conclusions.

In conclusion, I want to boil my remarks down to the following:

That boards of pharmacy should supervise sales of drugs in all stores, and all states should as far as possible have similar pharmacy laws.

That registered pharmacists only should be allowed to carry on the business and that the American Pharmaceutical Association should lend its purse and its influence towards uniform pharmacy laws in the various states.

THE PRICE OF PROGRESS.

The young man nowadays, if he is to make his own success, must positively instill into his efforts some new, out-of-the-ordinary, and absolutely original ways of doing things. It is true that we pay for everything that we get in some kind of coin. Everybody gets about what he deserves in the end. Soon or later every man has to pay. The price of progress resolves itself into the law of growth. And growth is not possible to any one who will not exert painstaking, aggressive, and original effort—not impulsive, spasmodic, temporary effort, but steady, firm, consistent and "thought out" effort; that kind of effort which is, by all means, economical, but highly effective. The most effective efforts are well directed only when prompted by instinct, by intuition and by knowing how, when and where to apply them in order to obtain the best results. Such efforts enable men to accomplish even seemingly impossible things.—*Western Druggist*.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

PRACTICAL PHARMACY METHODS AND DEVICES.

F. W. NITARDY, PH. G., PH. C., DENVER, COL.

Before explaining the apparatus set up before you, I should like to make a few remarks in regard to manufacturing, so far as it concerns the retail druggist. For your information I will state that I am employed by the Scholtz Drug Co., which conducts a chain of retail stores in this city. We have a small laboratory devoted to manufacturing and analytical work, and I believe a few figures and notes from our records may prove of value or interest to you.

In opening, let me say that by making our own U. S. P. and N. F. preparations, which I believe druggists as a general rule do not do as much as they should, we can most effectively convince the doctor that we are pharmacists, gain and hold his confidence, and thereby aid our propaganda work in a manner that brings tangible results, results that you can count in dollars and cents.

Mr. Raubenheimer speaks a great truth in saying at the close of the paper just read: "To practice pharmacy is the pharmacist's birthright, which he must not sell, as it will end his existence."

We have given the pharmaceutical manufacturing houses too much work to do. We must do more ourselves, and you will be surprised to note the profit we can make by producing as many official and other preparations ourselves as is consistent with the conditions under which we work. I shall quote some comparative prices to illustrate my point, and for this purpose I have taken the list prices of two of the best known pharmaceutical manufacturing houses of the United States with such discounts as you can get when you are on the "jobbers' list," and can buy in quantity, in other words buy these preparations as near right as any retail establishment can possibly buy them, and compared them with the cost of these preparations to us, that is the cost of production arrived at in our laboratory.

To give you an opportunity to judge as to the correctness of what we consider cost of production, I shall give you a brief outline of how we handle our work and how we arrive at our cost figure.

Every time a preparation is made the formula is written on a card like Fig. 1.

From this the preparation is made. These cards are serially numbered and form a permanent record by being bound into monthly volumes. The cost prices of the various ingredients are filled in as the preparation is made and extended when finished. The information on this card is then transferred to a card index card like Fig. 2.

NOTE HAVE FORMULA CHECKED BEFORE STARTING PREPARATION. CHECK OFF EACH ITEM AS USED AND FILL IN COST PRICES. MAKE ALL NECESSARY CALCULATIONS AND ALL NOTATIONS THAT MAY PROVE OF VALUE FOR FUTURE REFERENCE ON BACK OF CARD.

THE SCHOLTZ DRUG CO., LABORATORY

Made by Powers

Checked by H.M.

FORMULA		COST			
✓ Calcium Hypophosphite	280	Gr	86 lb.		.54
✓ Potassium "	140	"	116 "		.37
✓ Sodium "	140	"	82 1/2 lb.		.52
✓ Iron "	18	"	173 lb.		.07
✓ Manganese "	18	"	84 1/2 lb.		.07
✓ Guanine Alkaloid	880	"	37 oz.		.06
✓ Atropine "	92	"	1.20 oz.		.04
✓ Sodium Citrate	30	"	45 lb.		.03
✓ Dil. Hypophos. Acid	120	C.C.	84 gal.		.12
✓ Sugar "Conf A"	6200	Sim.	6.00 cent.		.96
✓ Distilled Water q.s.	8000	C.C.	10 gal.		.11
					2.89

Dissolve $\text{Ca} + \text{Mn}$ Hypophos. & Sod Citrate in 240 cc. of Dist. H₂O by aid of gentle heat.
 Dissolve Ca, K & Na Hypophos. in 3600 cc. Dist. H₂O to which 40 cc. Dil. Hypophos. Acid have been added.
 Dissolve Guin & Atropin in 240 cc. Dist. H₂O with the aid of 80 cc. Dil. Hypophos. Acid.
 mix the solutions and filter.
 Percolate sugar with filtrate, adding 120 grs. 8000 cc.

Preparation: Syrup Hypophosphites Comp. U.S.P.
 No. 6394 Control No. 11320 Date Nov. 13 - 1912

Fig. 1—Record Card.

THE SCHOLTZ DRUG CO. LABORATORY

PREPARATION RECORD

Syrup of Hypophosphites Compound
 U.S.P.

DATE	QUANTITY	RECORD NO.	TIME Hrs. Min.	MATERIALS	COST				LIST gal.	Quantity Manufactured
					Total	Per 1000 C.C. ordm.	Per Gal	Per Gal		
11/13/12	8000 C.C.	6394	2	289	428	54	2.03	2.05	1909	32000 C.C.
									1910	64000 "
									1911	64000 "
									1912	88000 "
									1913	
									1914	
									1915	

Fig. 2—Index Card

Each preparation regularly made at our laboratory has such an index card, giving the successive dates and quantities of the preparation made, cost, etc., all of which is very valuable information and in this form at your command at a moment's notice. As a further check on our products we keep a one-ounce sample of every preparation. This sample receives a control number which is also noted on the record card and the stock container of the preparation as well as every portion of it sent out to our stores. These samples are of value also to observe changes that may occur on keeping, etc.

In arriving at the cost of a preparation we add to the cost of materials used as shown by the record card, the cost of the time necessary to make the preparation (figured at 50 cents per hour), and a further 10 percent of the total of these two items which about covers what might be termed our overhead charges. The time allowance in all cases is liberal and based on actual observation of time required to do the work. With the above explanation I believe the message in the following figures will be clear to you:

	Our Cost.	Manufacturer's Price.	
		A	B
Elixir, Ammonium Valerate, N. F., gal.....	\$2 25	\$3 30*	\$2 70
Elixir, Aromatic, U. S. P., per gal.....	1 20	2 34	2 06
Elixir, Bismuth, N. F., per gal.....	1 65	3 85*	3.00
Elixir, Buchu, N. F., per gal.....	2 50	....	5 00
Elixir, Buchu and Pot. Acetate, N. F., per gal.....	2 85	....	5 00
Elixir, Cinchona, N. F., per gal.....	1 45	2 75*	2 63
Elixir, Digestive Comp., N. F., per gal.....	2 20	2 47†	2 63
Elixir, Gentian, N. F., per gal.....	1 90	2 47	2 63
Elixir, Gentian, Glycerinated, N. F., per gal.....	2 20	3 85†	3 37
Elixir, Glycerophosphates, N. F., per gal.....	2 30	4 40†	5 00*
Elixir, Iron, Quinine and Strych., N. F., per gal.....	2 10	3 30†	2 81
Elixir, Iron, Quinine and Strych. Phos., U. S. P., per gal.....	2 20	3 30*	3 00
Elixir, Potassium Bromide, N. F., per gal.....	2 10	3 03	2 63
Elixir, Strychnine Valerate, N. F., per gal.....	1 50	....	2 63
Elixir, Terpin Hydrate, N. F., per gal.....	2 60	3 99*	4 31
Elixir, Terpin Hydrate and Codeine, N. F., per gal....	4 75	6 60*	7 50
Elixir, Terpin Hydrate and Heroine, N. F., per gal....	3 60	6 27*	6 75
Liniment, Soap, U. S. P., per pint.....	37	....	56
Liniment, Turpentine, Acetic, N. F., per pint.....	35	....	49
Mixture, Glycyrrhiza Comp., U. S. P., per gal.....	1 05	....	2 25
Ointment, Boric Acid, U. S. P., per lb.....	30	....	52
Ointment, Iodine, U. S. P., per lb.....	70	....	1 13
Ointment, Nutgall, U. S. P., per lb.....	50	....	75
Ointment, Phenol, U. S. P., per lb.....	25	....	60
Ointment, Rose Water, U. S. P., per lb.....	60	....	94
Ointment, Zinc Oxide, U. S. P., per lb.....	30	51	54
Ointment, Resorcin Comp., N. F., per lb.....	60	....	90
Powder, Antiseptic, Sol., N. F., per lb.....	45	....	75
Powder, Dovers, U. S. P., per lb.....	1 70	....	3 00
Powder, Licorice Compound, U. S. P., per lb.....	18	....	30
Solution, Antiseptic, U. S. P., per gal.....	1 10	3 40†	2 63
Solution, Antiseptic, Alk., N. F., per gal.....	1 50	....	2 63
Solution, Arsenic and Merc. Iod., U. S. P., per pint...	25	....	41
Solution, Iron and Ammon. Acet., U. S. P., per pint...	12	....	56
Solution, Potassium Arsenite, U. S. P., per gal.....	50	....	1 60
Solution, Sodium Phosphate Comp., U. S. P., per gal.....	2 20	3 40†	2 70
Solution, Strychnine Acetate, N. F., per pint.....	35	....	45
Spirit, Ammonia, Aromatic, U. S. P., per gal.....	2 60	....	3 90
Spirit, Ether Compound, U. S. P., per pint.....	1 25	....	1 69
Spirit, Nitrous Ether, U. S. P., per gal.....	3 50	....	5 00
Spirit, Peppermint, U. S. P., per pint.....	70	....	1 20

	Our Cost.	Manufacturer's Price.	
		A	B
Syrup, Asarum Comp., N. F., per pint.....	28	....	56
Syrup, Citric Acid, U. S. P., per pint.....	12	....	32
Syrup, Ginger, U. S. P., per pint.....	18	....	29
Syrup, Hypophosphites Comp., U. S. P., per gal.....	2 05	3 02	2 63
Syrup, Iron Iodide, U. S. P., per lb.....	17	33	45
Syrup, Hydriodic Acid, U. S. P., per gal.....	1 80	3 21	3 00
Syrup, Rhubarb and Pot. Co., N. F., per gal.....	2 45	4 40	3 75
Syrup, Sarsaparilla Comp., U. S. P., per gal.....	2 00	2 48	3 00
Syrup, Squill, U. S. P., per gal.....	1 30	1 93	2 10
Syrup, Tolu, U. S. P., per gal.....	1 00	2 34	2 25
Syrup, White Pine Comp., N. F., per gal.....	1 75	2 04	2 40
Syrup, Wild Cherry, U. S. P., per gal.....	1 35	2 34	2 10
Syrup, Yerba Santa Aromatic, N. F., per gal.....	1 65	3 40	3 55
Tincture, Aconite, U. S. P., per pint.....	38	66	68
Tincture, Aloes, U. S. P., per pint.....	38	61	75
Tincture, Arnica, U. S. P., per pint.....	27	55	52
Tincture, Belladonna, U. S. P., per pint.....	29	55	68
Tincture, Benzoin, U. S. P., per pint.....	53	96	1 09
Tincture, Cantharides, U. S. P., per pint.....	52	1 31	1 01
Tincture, Capsicum, U. S. P., per pint.....	48	86	71
Tincture, Cardamon Comp., U. S. P., per pint.....	32	61	56
Tincture, Cinchona, U. S. P., per pint.....	40	88	86
Tincture, Cudbear, N. F., per pint.....	25	....	38
Tincture, Digitalis, U. S. P., per pint.....	33	55	71
Tincture, Gentian Comp., U. S. P., per pint.....	34	61	54
Tincture, Ginger, U. S. P., per pint.....	51	88	90
Tincture, Hyoscyamus, U. S. P., per pint.....	37	66	75
Tincture, Iodine, U. S. P., per pint.....	70	1 43	1 50
Tincture, Iron Chloride, U. S. P., per pint.....	30	69	60
Tincture, Iron Citrochloride, U. S. P., per pint.....	38	....	75
Tincture, Lavender Comp., U. S. P., per pint.....	40	74	71
Tincture, Myrrh, U. S. P., per pint.....	52	96	94
Tincture, Nux Vomica, U. S. P., per pint.....	38	66	68
Tincture, Opium, U. S. P., per pint.....	1 25	2 06	3 00
Tincture, Opium Camph., U. S. P., per pint.....	30	80	94
Tincture, Opium Deod., U. S. P., per pint.....	1 35	2 06	3 00
Tincture, Rhubarb, U. S. P., per pint.....	50	66	86
Tincture, Rhubarb Arom., U. S. P., per pint.....	53	69	75
Tincture, Stramonium, U. S. P., per pint.....	27	55	57
Tincture, Tolu, U. S. P., per pint.....	52	....	79
Tincture, Valerian, U. S. P., per pint.....	40	74	71
Tincture, Vanilla, U. S. P., per pint.....	88	1 38	1 35
Tincture, Viburnum Opulus Comp., U. S. P., per pint..	57	....	75
Vinegar, Opium, U. S. P., per pint.....	95	....	2 03
Vinegar, Squill, U. S. P., per pint.....	11	....	36
Water, Bitter Almond, U. S. P., per gal.....	45	....	2 25
Water, Camphor, U. S. P., per gal.....	45	....	2 06
Water, Cinnamon, U. S. P., per gal.....	40	....	2 06
Water, Peppermint, U. S. P., per gal.....	50	....	2 06
Wine, Antimony, U. S. P., per pint.....	18	44	49
Wine, Colchicum Seed, U. S. P., per pint.....	27	55	68
Wine, Iron, U. S. P., per pint.....	25	....	53

I believe the list is comprehensive enough to prove that I did not pick on a few articles that we accidentally produce cheaper than the manufacturers can sell them.

*Same drug strength but not claimed to be official.

†A preparation of similar composition to the official.

‡A preparation similar to, but weaker in its active ingredients, than the official.

Where no price is given the preparation is not listed by the manufacturer.

In all our preparations, quality not low price is our aim. We buy the best materials and spare no labor or care in producing products that we can honestly say are at least equal if not superior to the best the market affords. It would be to our advantage to make these products even if they would cost us as much as we would have to pay for the ready made article.

I should like to call your attention to another line of work handled at our laboratory which saves much time for the salesman or clerk and also stimulates and creates business.

Every drug, chemical or preparation that has any appreciable sale is put up in bottles, cartons or package form in one or more sizes according to demand. We design our package with the idea in mind that they be convenient to the con-

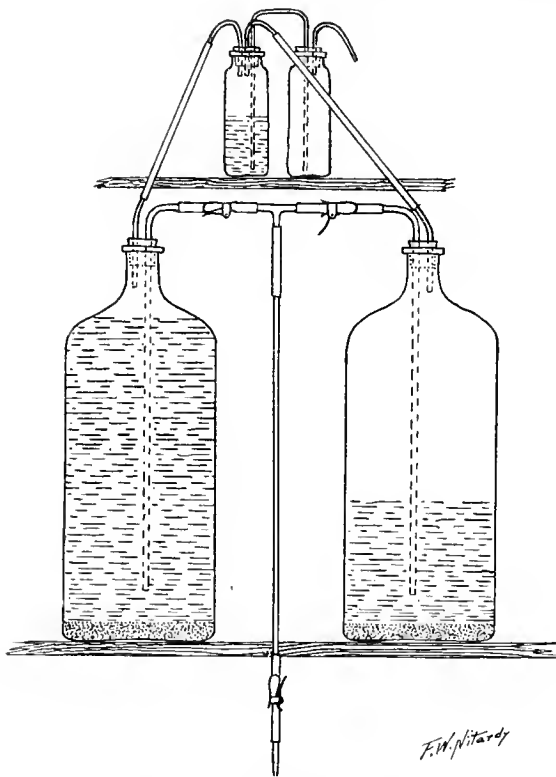


Fig. 3—Lime Water Apparatus.

sumer, preserving the unused portions, neat and attractive in appearance, but not expensive and above all bearing a label that gives such information to the consumer as he should have.

We use the term "U. S. P." or "N. F." whenever possible gradually educating the public that they mean something so far as quality is concerned.

Our records of the quantity of packages of certain articles sold during successive years show that suggesting to what use these staples can be put and giving proper directions for their use, is bringing very good results in increased business. We have more than doubled our sales on many of these articles in the last four years.

With your permission I will now explain this apparatus set up here. It is for lime water and quite simple even though it may look somewhat complicated at the first glance. We all know that lime water, no matter how carefully made, will deteriorate quickly, if exposed to air. For this reason the usual method of making lime water in one container, then decanting or filtering off the supernatant liquid into a stock bottle from which it is dispensed, is not satisfactory. It begins to deteriorate from that moment and when the last is dispensed it is little else than plain water with possibly a little chalk suspended in it.

This apparatus is intended to do away with filtering or decanting the lime water into a second container, to protect it from the action of air, and insure a continuous and plentiful supply, which will always be a strictly U. S. P. product, with a minimum expenditure of labor or trouble. The apparatus consists of two bottles of suitable size connected by means of a "T" tube with a double syphon having one outlet. The bottles are stoppered to prevent entry of air except

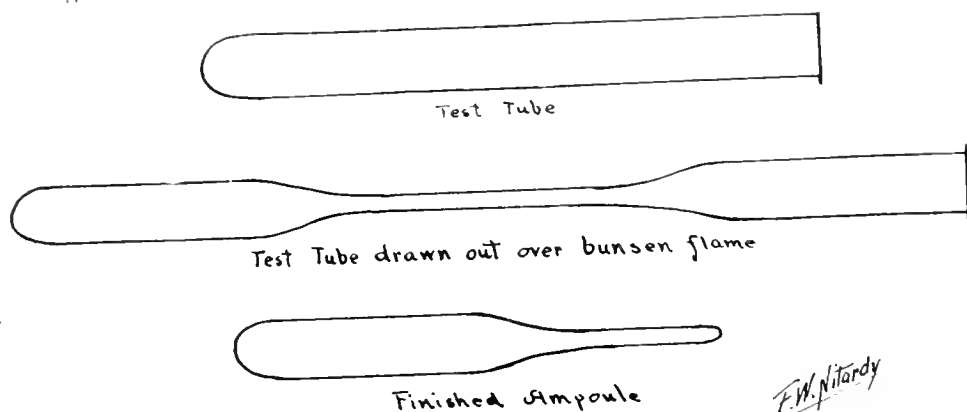


Fig. 1—Manufacture of Ampoules from Test Tubes

through the inlet tubes bringing air from a third bottle, half filled with concentrated Potassium Hydroxide solution through which the air must bubble in entering this bottle, thereby removing the CO_2 . The fourth bottle is an expansion bottle which prevents the spilling of the KOH solution in case of back pressure through change of temperature. Fig. 3.

To start the apparatus a quantity of the "Milk of Lime," hereafter described, is placed in each of the two syphon bottles. They are then filled with distilled water and allowed to settle till the supernatant liquid is clear. The syphon is then put in place, the air tubes connected, the syphon started and one of the syphon arms closed.

Lime water may now be withdrawn as needed from one bottle. When this gets nearly empty the other syphon arm is opened and the first closed, permitting the withdrawal of lime water from the second bottle, while the first is being refilled with distilled water, shaken, set back in place and allowed to settle, and so on alternately one and the other bottles are refilled without interruption of the syphon or ever being out of lime water.

The "Milk of Lime" referred to is a preparation consisting of lime slacked and washed by the U. S. P. process and bottled in semi-liquid form in well-sealed

bottles for future use. It is a great convenience and I should like to see such a product incorporated in either the U. S. P. or N. F. in the coming revision.

This display here consists of "home made" ampoules. In recent years, doctors are beginning to use sterile solutions for intravenous administrations, and the most satisfactory way of dispensing them is in a sealed glass vessel, commonly known as an ampoule. I suppose most druggists would consider it a little difficult to produce an ampoule extemporaneously, if they found they needed one, but it is quite easy. I make them out of test tubes. All you do is to clean a tube of suitable size and draw it out over a bunsen burner. After filling it is sealed and sterilized. The whole operation is quickly done and does not cost much. Fig. 4.

I also want to call your attention to a method of rapid filtration in use at our laboratory and originated by my assistant, Mr. Powers. Any liquid that will pass through paper rapidly will really filter quite slow because the paper lays close even to a ribbed funnel, not permitting the liquid to pass very rapidly. This is overcome by taking a large ribbed funnel and placing a small ribbed

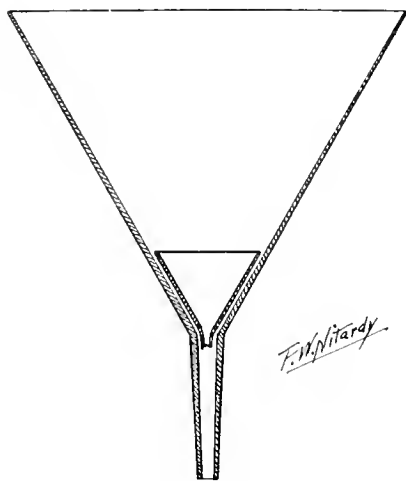


Fig. 5—Funnel for Rapid Filtration.

funnel, preferably one with the neck broken off, inside of it, thereby producing a space between the two funnels for the liquid to pass. By this method any liquid that does not clog the paper can be filtered in about one-fifth the usual time. Fig. 5.

Speaking of little tricks that save time and trouble, I want to mention our method of cleaning capsules that have been filled with a powder, such as aspirin, that has a tendency to adhere to the capsule. Shaking them in or rubbing them with a towel will not clean them. However, they are easily made bright and clean by placing them in a dish with a quantity of sodium bicarbonate, stirring and separating the sodium bicarbonate by means of a sieve, then finishing the capsules by shaking them in a towel.

One more suggestion and I shall close. Most of you have probably experienced some trouble with such preparations as Basham's Mixture, or Compound Syrup of Phosphates. I have a couple of samples of each here. This sample

of Basham's Mixture is about two months old and you notice it is in perfect condition. Here is another portion from the same batch. This is turbid, having precipitated a part of the ferric acetate in form of the insoluble basic acetate. The difference is due to the former having been kept in a refrigerator, while the latter has been kept at ordinary temperature, summer heat being sufficient to cause precipitation in this preparation.

In Comp. Syrup of Phosphates, N. F., a portion of the calcium salts will crystallize out unless kept in a cool place. Caramelization of the sugar also takes place gradually at ordinary temperature on account of the presence of considerable free acid, causing the beautiful red color to be displaced by a brownish color, which with the turbidity produced by the separation of calcium salts, makes the product very unsightly. Both can be prevented by keeping the preparation on ice. Here are two samples of this preparation from the same batch, one kept on ice and one at ordinary temperature. Note the difference! Not all druggists seem to realize the importance of keeping a preparation properly. Many a dollar, much annoyance and perchance your reputation as a pharmacist may be saved by properly protecting drugs and preparations from the influence of light, heat or air. No pharmacy should be without a refrigerator and other conveniences for proper storage of stock requiring such special care. For the proper preservation or storage of a preparation is every bit as important as its proper production in the first place.

DISCUSSION.

C. A. Mayo, of New York, led off in the discussion of Mr. Nitardy's paper, and said he had brought with him a few specimens of ampoules made from a new kind of glass. While one might be able to make them from test-tubes, it took some time to develop sufficient dexterity to do it advantageously, and ampoules could be bought quite cheaply. He had made some himself from test-tubes, and filled them with solutions of strychnine sulphate, but found there was a tendency to precipitate. This tendency was especially marked when solutions of alkaloidal salts were put up in ampoules made of very soft glass—as the ordinary lead glass. It had been found that ampoules of soft glass could not be used with any safety at all for alkaloidal solutions. There was some difficulty even with ampoules made from test tubes. But by using an especially hard glass, known as Jena No. 16, III, quite an advantage would be had. He had just received from a German manufacturer of ampoules on a large scale specimens made from a new glass which was even better and less subject to decomposition by alkaline solutions than the Jena glass, and he had brought them with him, thinking it might be interesting to the members to know that they could get these ampoules in a glass that was absolutely neutral.

He said that the Italians had probably done more with hypodermic medication than any other class of physicians. He thought the members would be surprised to find the variety of drugs the Italian physicians gave in ampoule form. Quinine, for instance; iron, quinine and strychnine—and particularly the iron salts were given hypodermically, and were dispensed in ampoules. In Greater New York there were 365 Italian pharmacists, and probably three times as many Italian physicians. Through them had been built up a large trade in ampoules, and an Italian there had gone into the manufacture and sale of ampoules, and had quite a large trade. Mr. Mayo said he had observed the method of a manufacturer in the East, who filled a good many ampoules with viscid liquors, and he said he had always found it necessary to fill them by means of a vacuum. He had been surprised to find that some of the French manufacturers used the rather tedious process of filling by means of a burette and hypodermic needle. By the vacuum method absolute sterility was

insured, whereas, if poured in through a funnel, it would be found that the capillary tube was so small that it would not run down. The way he himself accomplished it in that way was by alternately warming and cooling the ampoule.

Mr. Nitardy said that the doctor he had spoken of who ordered 500 ampoules at one time asked for a dry substance in them—sodium cacodylate. He simply poured the finely granular sodium cacodylate in the top of the test-tube, and a shake or two would bring it down into the bottom. In filling ampoules with liquid he used a piece of glass tubing that he had drawn out with a long point and graduated to the proper amount—a pipette. The long point was used to prevent the liquid from touching the sides of the neck of the ampoules. The reason the liquid should not touch the glass was that if it contained a substance which was destroyed by heat, it would char when the ampoule was sealed. His method of making ampoules was convenient for extemporaneous use when unexpected calls came, or the pharmacist was not prepared to fill such orders. If the doctor asked for a sterile solution in ampoule form, the druggist could make an ampoule on short notice, as it did not require great knack or experience. He had made the first one without any trouble. Mr. Nitardy said he knew that test-tube glass was not the best to use for a thing of that kind, and he did not mean to convey that idea, but simply to point out that it could be used in case of emergency.

Frederick T. Gordon, of Philadelphia, commenting on Mr. Mayo's remarks, suggested that, before filling the test tubes, it would be well to boil them in dilute hydrochloric acid and rinse them out with distilled water to remove the free alkali of the glass.

Mr. Mayo said he would not like this statement to go out without calling attention to the fact that European investigators had found that it was only a temporary advantage to clean them in this way, as precipitation would take place if allowed to stand long enough, as the alkali would find its way to the surface.

E. Fullerton Cook, of Philadelphia, said that Doctor Hutchins had recently suggested a device in connection with the sterilization of ampoules, the method being to sterilize the ampoule in water which was colored, and if any of the ampoules were not perfectly sealed the liquid would seep into the ampoule, and it was possible to detect that fact instantly upon taking them out of the liquid. He had also suggested the possibility of very efficient sterilization at comparatively low temperatures, because of the increased pressure brought about in the ampoule. This had not been absolutely demonstrated, but he had found that with comparatively low temperatures they were able to sterilize more successfully than would be expected at that temperature, and he accounted for it by the increased pressure in the ampoule when the liquid was heated.

Continuing, Mr. Cook said that one thing which had interested him greatly in the last few years, had been the subject of cost-accounting. Mr. Nitardy had mentioned this in connection with the prices he had given; for instance, he had taken the first cost of the material, and then the cost of labor and the loss in handling the preparation. Manufacturers who were carrying out cost-accounting and estimating the cost of material knew that there were a number of other items which must be considered. For instance, in order to put a preparation on the market, you must have a laboratory, and, unless you own the building, you must pay rent for it, as also insurance; and if salesmen were required to put the preparation on the market, that cost must go into the cost of the preparation. These "overhead" charges included every item of expense of the business, which must be considered as an item of cost of that particular preparation being priced. He agreed that the retail pharmacist could often manufacture an article more cheaply than the manufacturing houses, but nevertheless every item of cost should be considered. He had recently seen a pertinent statement bearing on this subject—an article intended to help the man who had to compete with the mail-order houses, and having nothing to do with the drug business. A man was represented as going into a hardware store and asking for a saw, and, being told that the price was seventy-five cents, produced his mail-order catalogue and said, "I can buy this for forty-five cents in Chicago." The merchant replied, "All right, I will sell it to you for forty-five cents." Then the prospective purchaser said, "Put it on my bill." But the merchant demurred to this, and said that it was only fair for him to pay cash for it, as he would have to do with the mail-order house. Then he should add to that twenty-five cents for express and

the two cents it would cost to order it. By this means, he demonstrated that the seventy-five-cent saw which the prospective buyer was going to get for fifty-five cents in Chicago would cost him in fact eighty-two cents cash instead. Not only so, but in this case the merchant claimed the right to keep the saw on his shelf for two days, as it would take the customer that long to get it from the mail-order house. Mr. Cook regarded this as a practical illustration of the working of the cost system.

Mr. Culley, speaking along the line of Mr. Cook's remarks, said he assumed that when Mr. Nitardy had named the sum of 50 cents an hour as the entire cost, that this was the price of his own salary, and did not include such overhead costs as the cost of containers, freight and delivery, and all items that went into the cost of the goods.

W. C. Anderson, of Brooklyn, said he did not think the comparison made here with reference to manufacturing houses and manufacturing retailers weakened the argument of Mr. Nitardy. The overhead expense that the manufacturer had for rent, insurance and the like was always paid by the retail druggist; he had to pay that whether he manufactured himself or bought from the large manufacturer. The time a clerk wastes in many stores could be used in manufacturing, and the 50 cents an hour added by Mr. Nitardy could, under these circumstances, be taken off the expense of these preparations. This saving would more than balance the cost of containers or anything of that kind.

Mr. Anderson, continuing, said he thought this address was a most interesting and instructive one. Time would not permit of going into the different items presented, such as lime-water and the keeping of the different preparations, but he felt that the Section was greatly indebted to the gentlemen who had presented this argument in favor of these little things that pharmacists so often forgot. Pharmacists often make a preparation properly, but never think of its keeping—never consider temperature, and other little matters that Mr. Nitardy had called attention to. The question was frequently asked why it was that the retail drug business did not pay better, and he thought it had been answered here today in a very clear and positive way. It was because the retail druggist was not saving money by manufacturing, instead of paying for the manufactured article. He not only lost in a commercial way—but he lost in experience. He also lost prestige, and lost his reputation to a great extent with the physicians. Mr. Anderson said he had nothing to say against the manufacturing houses, as they were doing a legitimate business; but the retail druggist himself was at fault in this matter, and he believed that every one of them should take to heart the facts and figures given here, because it was one of the things which would bring about the condition that all pharmacists were striving for, that of the true practice of pharmacy.

Cornelius Osseward, of Seattle, said it was refreshing to hear a paper of this kind. A few of those present might say that this would do well enough for a large store, but not for a small one; but he assured the members that it could be applied to the smallest pharmacy in the land. If, instead of standing over a show-case and reading a newspaper during business hours, the pharmacist would make his own preparations, he would find it a paying investment of time and effort. Personally, he did not think Mr. Nitardy should charge any time expense to these preparations, as it was wasted right along by the average pharmacist.

Mr. Nitardy, replying to the comments made upon his paper, said that Mr. Anderson and Mr. Osseward had already, in a way, answered the several questions asked, but he would like to state for information that the laboratory where he was engaged was run as part and parcel of the main store of the firm, and for that reason could not furnish good data as to the correct running expense, or "overhead" charge, as it was called. He paid no rent, taxes or insurance, as these went in with the expense of the main store, and he did not know what part to apportion to them. However, he had tried to allow for all of these in a way, though it was but a guess. He was satisfied that he had come very close to them, as he had watched the conditions closely. He thought the time he had allowed was liberal. The time necessary for cleaning of dishes and such things as that was also considered. They made some things in somewhat larger quantity than the ordinary store would make them, and in that way cut the cost down a little. But he was satisfied that the figures he had given would come very close to being the actual cost of production, everything considered, for the average druggist. If anything, it would fall below the figures quoted.

Mr. Cook, speaking again on this subject, said he had not intended to raise any question as to the value of the figures given, but simply wished to call the attention of the retail druggists to the fact that for absolute accuracy in cost of materials he must estimate the cost of items which were not spoken of here. Notwithstanding the fact that he would have his room anyhow, and would probably be hanging over the counter and reading the newspaper, if he was to get at the absolute cost of these things he must take into consideration the items which entered into that cost. In the case just cited, where the laboratory was part of the main store, and paid for out of the rent of the store, it was only proper that the laboratory should be divided off into square feet and pay its fair proportion of that charge. The same rule applied to labor and the like. It was at last only a matter of book-keeping, to get accurate results. While the retail druggists of the country were not considering this question of actual cost, the large manufacturer was making it a big feature of his business, and had fixed his selling price on the actual cost of his products, and not the supposed cost.

Mr. Mayo, recurring to the subject of ampoules, said that the method of testing the sealing of ampoules by boiling in a colored solution did not originate with Doctor Hutchins. This method had been originated by von Boyesen, a German. Mr. Cook, he had supposed, had seen him use this method some three or four years ago at the Philadelphia College of Pharmacy. The method was described in the Proceedings of the American Pharmaceutical Association at the Los Angeles meeting.

THE ALCOHOL CONTENT OF THE BLOOD.

Schweisheimer carried out a series of experiments on total abstainers, moderate drinkers and drunkards. He found an extremely small percentage of alcohol in normal blood, .029 to .036 percent. Alcohol passes directly into the blood as such, and in the blood of a drunken man may reach as high as 2.26 percent. On taking a given amount, a higher percentage is found in the blood of a non-drinker than of a drinker. In the non-drinker the highest alcohol content is reached after one and a half to two hours; it remains at this level for a considerable time (five hours, as contrasted with two hours in drinkers) and falls slowly. In drinkers it rises and falls quickly, the entire time required for elimination being about half as long as in non-drinkers. The psychic signs of drunkenness run parallel with the concentration of the alcohol in the blood. The hypersensitiveness of epileptics to alcohol is probably due to the fact that they are unable to oxidize the alcohol and thus an abnormally high percentage of it passes into the blood. This determination of the alcohol content of the blood may be used clinically to differentiate between unconsciousness from alcohol and other causes, such as uremia, opium, trauma, etc. Tables and curves are given showing in detail the results of the experiments.—*Journ. A. M. A., Vol LX, p. 704.*

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

REMINISCENCES OF PHARMACY IN THE ROCKIES.

JOHN BEST, CENTRAL CITY, COLO.

As one of the pioneer pharmacists of this state I have been asked to tell something of the conditions of pharmacy in the early days when Colorado was on the fringe of civilization. This I take pleasure in doing, but I must warn you that there is little excitement in my experiences; in fact I had more excitement in New York City before I came to Colorado than I ever had here. That was the time of the "draft riots" in New York in 1863 when we had to board up the windows of the drug store where I was then employed for protection against riotous mobs. I never have had to board up a drug store in Colorado.

My early experience in the drug business was in New York. I graduated from the New York College of Pharmacy in 1865, and like many other young men of that time took Horace Greeley's advice and "went West," settling down in Central City, Colo., in 1866, and opening a drug store there. Central City at that time was the largest city in Colorado, Denver being only a small town, deriving its population and prosperity from the rich mining region of which it was the center. At that date our city boasted of six drug stores, all prosperous and friendly, and all conducted by educated pharmacists. There were then only three drug stores in Denver.

We had no price cutting then. Most of our trade was strictly professional, there being comparatively few patent medicines sold, and such as we carried sold at an average of 50 percent over the regular prices in the East. Hostetter's Bitters, Ayers, Hood's, Schenck's and other old time proprietary remedies were in good demand, Ayer's especially, I being the first general agent for Ayer's goods in the Rocky Mountain country. Strange to say, perfumery was very popular and I sold vast quantities of Lubin's extracts and soaps, the favorite brand, at one dollar per bottle or cake. Hair oil was another great favorite and I reaped an honest profit by dispensing lard oil perfumed with bergamot, under the popular name of "Bear's Oil," at 25 cents an ounce. Much of my business, as with other druggists then, was the supplying of chemicals used in the mining industry, quicksilver being one of the principal items. Most of these chemicals were obtained from St. Louis, that being the headquarters of the overland shipping trade.

The mention of quicksilver reminds me of one exciting experience. I had in 1873, when Central City was almost wiped out by a fire that destroyed most of the stores and houses there, in stock twenty-three tanks, or flasks, of quicksilver, and as these were very valuable, I made special efforts to save them from de-

struction, so we risked cremation and managed to get out twenty-two tanks and dumped them in a deep well nearby. Later I had these tanks rescued, it being necessary for me to call on some expert mining workmen, so deep was the well. This is the only instance I can recall in the history of mining for precious metals in Colorado when mercury was mined from a well. The twenty-third tank—note the number—had to be left in the store, and after the fire was over, everything burnable being burned up, I found it apparently unharmed in the ruins of my store, but on closer examination the tank was found to be absolutely empty, the intense heat of the fire opening the seams of the iron container and literally boiling off the quicksilver in vapor through these openings.

In those days druggists were compelled to buy or order staple drugs and chemicals in large quantities because of the length of time required for shipment and the high freight charges. In making up my orders on the wholesale firms supplying this territory I would order a quantity of each article sufficient to last me for six months or a year, for when the stock of any article was sold out it was out, generally for some months. We Colorado druggists also had to be very careful in timing our orders to prevent damage to goods by climatic changes in transit. Thus, every preparation that would freeze at low temperatures had to be ordered far enough ahead of the time of delivery so that it would be in transit over the plains and mountains during the summer season, this often requiring three or four months. It was customary to send in our principal orders twice a year, so that shipments could be made at the most advantageous time. We had even then both fast freight and ordinary freight classification and, of course, appropriate charges. The "fast freight" had mules for motive power and the average time was three months between Colorado and eastern cities and the cost of fast freight shipments being 22 cents a pound. Ordinary shipments and heavy drugs and chemicals came to us by ox teams, and six months was the usual time between the sending of an order and the receipt of the goods. This class of freight cost 10 cents a pound, everything in those days being reduced to pounds instead of tons.

In those days goods were shipped in bulk and often several druggists would combine their orders so as to secure original bulk packages and thus cheaper freight charges. Naturally we made most of our galenicals, it being cheaper to buy the crude drugs and alcohol, and make them, than to pay freight on finished products. Another factor was the cost of packages. Everything shipped by the old-time freight wagons had to be as compact as possible and packed in containers not liable to breakage. Usually we had little trouble from deterioration of goods during their long transit across the continent, as shippers understood conditions and packed goods to meet the strenuous conditions of overland or water shipment. Some things, though, did give trouble, especially pills, the old-fashioned proprietary kind.

These, you know, were not protected by sugar or gelatin coating, so in spite of liberal dusting with licorice powder, we would frequently find boxes of pills in which the heat, etc., had caused the pills to become soft, and adhere in a mass. I believe I sold the first sugar-coated pills introduced in this territory, Ayer's Liver Pills, the price of which was 50 cents a box, and no trading stamps.

Business was done mostly on a cash basis. There was very little barter, the

only business of that character being done with the Indians of nearby villages who used to offer furs, etc., in trade for their wants. To the Indians we sold large quantities of perfumery (but very little soap), and patent medicines, especially the kind that had a very bitter or strong taste. I had to disappoint an eastern friend who once asked me how I used to estimate prices by weighing the rough gold offered by miners for goods, by telling him I never estimated. Colorado folks had real money and plenty of it even in early days. Conditions were not so rough nor were we so uncivilized as people of eastern states imagine, and except for the necessary crudities of a new country and our isolation by distance from pharmaceutical manufacturing centers, the drug business was pretty much the same as is still found in small country villages.

We had our share of Indian warfare when the Utes went on the warpath, in 1866 to 1867, when Colorado was practically cut off from all communication with the eastern states for months, but except for the isolation and inability to replenish stocks we druggists suffered little.

As eastern members no doubt observed while passing through the state, Colorado has few native plants used medicinally. Mountain sage is probably the most important native drug and the first shipment of this drug commercially, by the way, was made by me to Parke, Davis & Co. This plant is believed to possess valuable properties by the Indians and it has been used since the early pioneer days for treatment of what we call "mountain fever." The native drugs upon which Colorado's early prosperity was based were handled by druggists only in small quantities. I refer to gold and silver, so we had to depend on our skill as pharmacists and use foreign drugs to collect even the small amounts of these native drugs we handled.

There are so many things that seem commonplace to the pioneer which are wonders to the novice that I hesitate in offering even these brief reminiscences. I have no "wild and woolly west" experiences that I can recall, so I trust that members will pardon my lack of exciting incidents. Just one final word, we Colorado druggists have always been pharmacists in the true sense of this term, and I know our successors, the younger men, will uphold our traditions.

SOME OLD-TIME BROOKLYN DRUG STORES.

THOMAS D. MCELHENIE, PH. G., BROOKLYN, N. Y.

In 1796 appeared the first directory of Brooklyn, which was really only a sort of appendix to the New York directory. No druggist is named in this volume but there appears the name of John N. Barbarie, Physician, on Main Road, probably Fulton street, and very likely this country doctor handed out medicines.

In 1799 a German apothecary named Kempe or Kempff opened a drug store in the village. The location is in doubt but was probably in the vicinity of Fulton or South Ferry. This business was succeeded to by the son of the founder and in 1860 the second Mr. Kempe was succeeded by his nephew, Mr. Louis Lehn.

who will be recalled by many here present as the founder of the jobbing house of Lehn and Fink. Mr. Lehn is now living in Germany. In 1873 he sold the retail store to two young men—Henry Syvarth and Chas. F. Schleussner. The store was then and for many years before at 125 Atlantic avenue. In 1890 it was moved to 84 Court street, and after two or three short term changes in 1896 Mr. Thomas Lamb became the owner and still continues.

In 1825 Spooner's Directory of Brooklyn names two druggists, Isaac Kipp, 63 Fulton street, and John V. E. Vanderdoef, 108 Fulton street. These establishments have passed out of existence with no lineal successors that I can learn about.

In 1830 there came to Brooklyn from Ireland one Dr. Brice who established a small surgery or drug store doing a prescribing and dispensing business. The store was in James street, near York, for many years, and when the anchorage for the first bridge was to be built James street was wiped out. The doctor's son, Israel B. Brice, who had grown up in the business and succeeded to it, moved to 73-75 Fulton street, where he remained for many years. Mr. Brice sold to his clerk, Mr. Geo. H. Norfolk, who grew grey in the shop, but kept up the old sign, "I. B. Brice." The business is now located at 115 Fulton street under the style "Hoyt Drug Co."

In 1834 one William Bailey started a drug store at Fulton and Sands streets. It was in some ways a branch of a London wholesale house, Bailey & Co. In 1846 a young Canadian named John Worthington came in as a clerk and afterwards bought the store from Mr. Bailey for \$4,000. For several years after the Civil War the profit averaged \$5,000 a year. In 1849 the store was destroyed by fire and the second store at Fulton and Pineapple was burned out in 1861. The third store at 162 Fulton street is still in existence, known for fifty years as "Apothecaries Hall." It is now owned by the son Arthur, a member of the American Pharmaceutical Association. On a recent call he showed me some interesting relics of old times. A copy of the second year's price list of Dr. Squibb in 1859 partly printed and partly written, the latter being recent additions. There were only two fluidextracts listed. The old gentleman died only three or four months ago at the ripe age of 87, as the result of an injury by an automobile near his home some weeks earlier. But for this he would be hale and hearty now and my cherished plan for a talk with him would be carried out and many points of interest brought out.

Forty years ago or more—date is uncertain—there was a drug store kept by a Dr. Geo. B. Irish, between Brice's and the ferry, probably about 37 or 39 Fulton street. A feature of this store was Root Beer. About 1875 or 1876, Dr. Irish sold to his brother-in-law, Mr. Philo Jackson, who moved it up to 511 Fulton street, now the shopping center of Brooklyn, and later moved it still further up Fulton street.

About 1874 Mr. Jackson established the first drug store on Coney Island. Mr. Albert Chambers has carried it on for thirty years on the same spot in larger premises and he owns the buildings and the ground, a most unusual circumstance on that stretch of sand. Viewed as sand it is only useful for scouring tinware, but lying where it does it is worth all kinds of money.

Board of Pharmacy. At the 1885 special meeting, March 7, of the state association, a committee was appointed to select fifteen names out of which five were chosen to constitute the State Board of Pharmacy. The names of the five selected by the association were submitted to the governor of the state, and were appointed by the governor to serve on the Board of Pharmacy, respectively, from one to five years.

College of Pharmacy. In 1886 Mr. Melendy, in his presidential address, advocated the establishment of a college of pharmacy in connection with the University of Minnesota. The matter was placed in the hands of a College of Pharmacy Committee, appointed at the 1886 meeting of the association. The Legislative Committee of the state association assisted all they could in getting the appropriation of \$5000 for the College of Pharmacy in 1891. President Northrop also assisted very materially in obtaining the appropriation. The committee, among whom were Messrs. Melendy and Webster, of Minneapolis, and Messrs. Frost and J. P. Allen, of St. Paul, held several conferences with President Northrop, of the University of Minnesota, and ex-Governor Pillsbury, a member of the Board of Regents of the University of Minnesota. At one time, in order to see President Northrop, the committee attended chapel exercises and had seats on the stage—conference with President Northrop afterward. President Northrop was very anxious to have a college of pharmacy organized. The basis of Mr. Melendy's reputation as the father of the College of Pharmacy rests largely with the work he did with ex-Governor Pillsbury with a view toward establishing the college. Mr. Melendy and Mr. H. G. Webster kept after things, never letting up, until they accomplished their purpose.

Mr. T. F. Stark, of Minneapolis, also was instrumental in establishing the college and worked hard with the rest. The following named men were among the early workers in whatever appertained to the College of Pharmacy prior and subsequently to 1883: Crocker, of Fairbault; Max Wirth, Duluth; Henning, Stillwater; Dr. C. Weschke, of New Ulm; H. G. Webster, R. A. Becker, of St. Paul; W. C. Calbraith, G. A. Gotwald, D. D. Lambie, S. R. McMasters, B. Zimmerman, A. P. Wilkes, A. J. Wampler, S. H. Reeves, R. O. Sweeney, Karl Simmons, of St. Paul; J. R. Hofflin, Geo. Huhn, W. K. Hicks, T. F. Stark, of Minneapolis; G. Hargesheimer, of Rochester; J. R. Jones, of Mankato; W. D. King, of Stillwater; Dr. J. C. R. Kellam, of Heron Lake.

Practice of Pharmacy in Minneapolis Before the Law Went into Effect. The drug business in the early seventies had the reputation of being a money maker. Many put money into drugs only because it was thought there was great profit in them. This led to low standards in pharmacy and stimulated those who were pharmacists to act in regard to the passage of the law. In New York and several eastern states they were passing laws and those who could not get into business in the East came West. All patent medicines sold for the price marked on the container. There was no haggling or dickering over prices at that time, and customers paid whatever prices were asked for sundries, etc. No department stores at that time. Prescription business was fair, but many physicians carried saddle-bags and furnished their own medicines. Not many proprietaries or patents were prescribed at that time by physicians. Not much soda water

was dispensed and mineral waters were sold by the bottle. Some druggists carried cigars, but not all. Mr. Melendy did not. Caswell & Hazzard, of New York, furnished Mr. Melendy all elixirs, and Thayer & Tilden furnished him with such fluidextracts as he did not prepare himself. Messrs. Melendy & Lyman was one of the first firms to put in a line of Squibb's standardized fluidextracts. The first Squibb's Fluidextract of Belladonna that Mr. Melendy dispensed was in a prescription of Dr. C. G. Goodrich for the Reverend Sample, of the Westminster Presbyterian church. The prescription called for F. E. Belladonna in a three-ounce mixture. It was dispensed on Saturday, the Rev. Sample taking a dose Saturday evening and another Sunday morning. By the time the Reverend was ready to read the Bible at the morning service, the effect of the belladonna upon the eye had become sufficiently pronounced to make it impossible for him to read the scriptural passages. This was one of the earliest testimonials for Squibb's standard fluidextracts. It appears that neither the physician nor the patient expected any such effect from the belladonna.

CAPSULE FOR TESTING GASTRIC ACIDITY.

Opitz has been much pleased with the accuracy and reliability of the information derived from congo and litmus paper enclosed in an oval rubber capsule about 1.5 cm. long by 0.5 cm. wide, studded with perforations and made in two parts which screw together. A silk thread is fastened to one end of the capsule, and a nickel ring is enclosed with the two scraps of paper to add weight. To prevent any interference from the saliva, the capsule is loosely wrapped in a wafer and is placed far back on the tongue so that it is swallowed at the first movement of deglutition. After a given time it is drawn out by the string, unscrewed, and the change of tint in the test papers compared with a color scale. By this means it is possible to estimate the amount of free hydrochloric acid in the stomach at a given moment after the test breakfast, although of course this simple method will never take the place of the more accurate determination by means of the stomach tube.—*Journ. A. M. A., Vol. LX, p. 634.*

Coming on up Fulton street at the corner of Clinton, is the impersonal store of the Riker-Hegeman Co., which dates back forty years and more, when Davies & Leys carried on a fine apothecary shop there. Many veterans in the trade will recall Leys' Nipple Wash. This store was the source of it. A long block further up, at the corner of Pierrepont street, was Cyrus Pyle's store, a fine shop in the seventies or a little earlier. Mr. Pyle took on at one time a green boy from Hudson, N. Y., named Lithgow T. Perkins. He told Sam, his darkey porter: "Sam, show this boy how to clean up things." Sam took him back to the sink and said: "There's the soap, there's the water and here are the dirty bottles. Now pitch in." He gave him no further instructions, but the boy made good and became known among the foremost pharmacists of his city and state—President of Kings County Pharmaceutical Society and for years Secretary of the Kings County Board of Pharmacy. After some years with Mr. Pyle, his employer opened a branch store away uptown at Greene avenue and Cumberland street, placing Mr. Perkins in charge, with the result that Mr. Perkins bought it out and carried it on until he sold in 1898 to Albert E. Marsland, one of Brooklyn's rising young men in pharmacy, who was brought up in my store, spending with me as boy, clerk and partner about eighteen years. His widow still owns the business, having as manager another of my old boys, Mr. I. W. Price. The Perkins store has always been a notable prescription store and headquarters for doctors.

To slip back down Fulton street a few doors above Mr. Pyle's and across the way, about 1862 there was opened by Mr. Isaac D. Smith a store in a small triangle at the junction of Fulton, Washington and Court streets and Myrtle avenue, where about all the cars in the city passed. In 1865 this store was sold to Mr. Chas. W. Kitchen who inaugurated the first "Always Open" drug store. He sold in 1884 to Mr. Morrissey, who is now at No. 6 Myrtle avenue. During Mr. Kitchen's time he opened at the new Brighton Beach hotel, at Coney Island, a very showy branch store in a pavilion built to suit an enormous soda fountain which had been built by Jas. W. Tufts for a show piece at the Centennial.

Coming along up Fulton street we come next to what is now a saloon but was for many years the drug store of Wm. H. Douglas, who was first in the employ for some years of a Dr. C. Prince who started it about 1851. A few blocks further on at the corner of Bond and Fulton, now a part of the department store of Loeser Co., was the drug store of Wm. Wynne, opened about 1846 by a Mr. Atwater, sold to Mr. Wynne in 1861, and now at 44 Flatbush avenue. The business is now owned by Mr. James Vinnicombe.

At the corner of Washington and Sand streets stood for many years the store of Dr. Henry J. Menninger, started about 1865, which was wiped out by the building of the bridge and moved two or three blocks north to the corner of Jay and Sands, and again moved by the building of the Manhattan bridge, going part way back to No. 61 Sands street. The business belongs to the widow of Karl Behrens, now Mrs. Harper. Mr. Behrens was a clerk for Dr. Menninger for several years.

In this neighborhood is the store of Mr. Geo. S. Bentley, at Adams and Nassau since 1880. He moved there from Pearl and Nassau, where he had begun in

1871, having bought the business from a Dr. Chas. Cranmer, who had succeeded some years before a Dr. King of New York.

For a long jump we will travel out to 3rd avenue and 17th street, where is located a handsome new building, with Hogan's drug store in the corner and apartments upstairs. The whole belongs to one Hogan, an Irish physician. It was started in 1847 by a Dr. Williams, who carried drugs and hardware for some years and sold to Edward Buckley about 1860 the drug part of the shop. In 1870 he sold to W. E. Strachan—and he to W. S. Doe, who is stated to be the real original inventor of the carbon filament incandescent light, doing his experimental work in the cellar of this old rookery drug store, where it was seen by somebody else. He sold to the present owner.

At 3rd avenue and 21st street was another drug and hardware shop of Mr. Godfrey at about the period of Dr. Williams spoken of above. These two stores had a large trade from the farming section stretching out to the south, right out to Fort Hamilton and Bensonhurst, having no store nearer.

About 1869 Mr. Wm. H. Douglas, heretofore mentioned, opened out in Flatbush the first drug store in that section, which had the village and farm trade all about as far as Coney Island. During 1875 the writer was in charge of this store, leaving in the spring of 1876 to engage on his own account in his present store, which was started in 1869 by a man named Kennedy. This is the shop jocularly referred to by some of the craft when they tell inquirers for drawing papers, etc., "Oh, you can get it down at that funny drug store near the Pratt Institute."

Away over in Williamsburg, or Eastern District, at 690 and 692 Grand street, stands the handsome and completely fitted store of R. C. Knipe & Son. It was built by Mr. R. C. Knipe in 1870 and has always been a popular store in a thickly populated section.

In 1848 Mr. C. M. Wright opened a drug store at the corner of Sackett and Columbia streets, with only a capital of \$300. This was the first drug store south of Atlantic avenue.

In 1851 he moved to Union and Columbia streets, which is one of the corporation stores today. As there were a great many Germans in the neighborhood, Mr. Wright, an American, was compelled to keep a German clerk and also to study German himself, which in time he mastered so well that old German customers frequently asked him from which part of the "Vaterland" he came.

Alexander Hudnut about this time opened a drug store on Court street, opposite Warren street. Mr. Hudnut later moved to the Herald Building, 205 Broadway, New York City, where he did a very prosperous business and also realized his desire "*to snap his fingers at the doctors*," meaning that he did not have to depend upon the physicians for business.

In 1874 a row of houses was built on Fulton street (the old Brooklyn and Jamaica turnpike) between Verona Place and Marcy avenue, in the old Bedford village, now known as the Bedford Section. The neighborhood of the so-called "Bedford Corners" up to that time was a farming district occupied by Betts' farm. Barnum's circus used to put up its tents in this vicinity, and the Brooklyn boys and girls used to go skating on a flooded meadow nearby, called the Capi-

toline grounds. In 1874 Mr. C. M. Wright and his son, Frank F. Wright, as the firm of C. M. Wright & Son, opened a drug store in the new building at the corner of Fulton street and Verona Place. This store, on account of being fitted up so elegantly with plate glass windows, black walnut fixtures, marble floor, French plate glass showcases, etc., became known as the "Palace Drug Store." This, by the way, was the first store in Brooklyn which later had such a luxury as a metal ceiling. In 1876 the store went into the possession of Dr. Watts, and Mr. C. M. Wright opened the store at Gates and Reid avenues in 1877, which in 1879 became the property of his son, Frank F. Wright, who is now at Brooklyn and Atlantic avenues.

After the death of Dr. Watts the "Palace Drug Store" became the property of Thomas Jones, an English "pharmaceutical chemist," who also owned the drug store at Fulton street and Classon avenue and at Bedford and Gates avenues. After Mr. Jones' death the store changed hands several times, until it came into possession of Otto Raubenheimer, the Chairman of the Historical Section of the American Pharmaceutical Association and former President of the New York Branch, who turned it into an ethical pharmacy, with a sign in one of the show windows: "No Cigars, No Candy, No Ice Cream, No Soda Water, But I Do Sell Pure Drugs and Medicines."

There is a dear old lady living near my store who was brought as a bride to a new drug store just being opened by her proud young husband at Myrtle avenue and Fleet Place about February 1, 1851—sixty-one years ago, and she still owns the business. She is Mrs. R. G. Rutherford. Although now past four score, she attends quite regularly the meetings of the N. Y. State Association, where she is greatly esteemed. She has told me that in the old days there were detached houses with garden plots all about. Now it is largely a negro population in old rookeries.

There are many more long established stores of excellent repute in Brooklyn, but the subject grows on one when starting in to write about it and has already outgrown reasonable limits. Perhaps another year we may take it up again.

EARLY MINNESOTA PHARMACY¹

AN INTERVIEW WITH MR. S. W. MELENDY, ONE OF THE PIONEER MINNEAPOLIS PHARMACISTS. F. J. WULLING, MINNEAPOLIS, MINN.

Mr. Melendy came from Dane county, Wisconsin, to Minneapolis in the spring of 1871. The population of Minneapolis at that time was about 13,000. His first position was that of clerk with the firm of Lyman & Williams, wholesale and retail, located in Center Block near Second street, the heart of the business district at that time. He was with them from the spring of 1871 until 1873, when he went into the retail business with Mr. George R. Lyman

¹Read at the Joint Meeting of the Northwestern Branch A. Ph. A. and the Minnesota State Pharmaceutical Association, at Winona, Minn., June, 1912

under the firm name of Melendy & Lyman. They were located under the Nicollet hotel on Washington avenue. They remained there until 1877, when they moved to 241 Nicollet avenue and with others inaugurated the trend of business up Nicollet. Fifteen years later the firm moved to 421 Nicollet. In 1874 Mr. Melendy and family moved to what was then near the suburbs of Minneapolis at 37 Seventh Street South, where they resided until May, 1904. About one and a half years after moving to 421 Nicollet avenue, the firm Melendy & Lyman went out of business by selling out stock, fixtures, etc.

Among the first drug stores in Minneapolis were those owned by the following: Gray Bros., Hennepin avenue below 2nd street, now carried on by Horace Gray, son of T. K. Gray, in the same location as that occupied by the firm in 1855; George Huhn, on Hennepin avenue below 2nd street, later moved to Nicollet avenue, just below 2nd street; Savory & Johnson, corner of Washington and Hennepin avenues, before that under the Nicollet hotel on Washington avenue; James Murrison, Merchants block on Washington avenue, corner of 2nd avenue south (then Helen street); Webster Benner, in the Cataract House, corner of 6th avenue south and Washington avenue; James Slemmons, on Nicollet avenue below Washington; Thomas Gardiner, one of the old-timers, on Nicollet, now on Hennepin near 8th street; Lyman & Williams, wholesale and retail, in Center block, running through from Hennepin to Nicollet avenues—the original firm name of the latter was Lyman & Tucker. Mr. Nelson Williams bought out Mr. Henry Tucker; later Geo. R. Lyman bought out Mr. Williams; later Mr. T. W. Lyman entered into partnership with Geo. R. Lyman under the firm name of Lyman Brothers. About 1876, Mr. J. C. Eliel came from Chicago, Ill., and bought into the firm and the firm became known as the Lyman-Eliel Drug Co., and recently was absorbed by the Minneapolis Drug Co.—Crossman & Plumer, corner 2nd street and Nicollet avenue; Hofflin & Thompson, corner Washington and 1st avenue south, at a little later date.

State Association. A local association was organized in St. Paul by the St. Paul pharmacists in 1883. Minneapolis also organized a local association at about this time. St. Paul was the larger city at that time, and it was the St. Paul pharmacists who first conceived the idea of organizing a state association. A meeting was held and Mr. Sweeney was elected president. A delegation was sent to Mr. Melendy to ask him whether he would accept the position of first vice-president. This he did. Mr. H. G. Webster was third vice-president, and Mr. S. L. Crocker, of Fairbault, second vice-president. Mr. Stierle was treasurer and W. S. Getty, secretary. The association was organized October 16, 1883, over Lambie & Bethune's drug store, corner 3rd and Wabasha streets, St. Paul, and the constitution and by-laws adopted at that time. A local druggists' association of Minneapolis sent a delegation to the local association at St. Paul and a conference was held. A state meeting was called to discuss the subject of a state law regulating the practice of pharmacy. Mr. Melendy suggested that this proposed state law emanate from the state association. This first meeting was held in 1885 in the Board of Trade rooms, St. Paul. A committee was appointed, at the first meeting, to introduce a pharmacy regulatory law—the law was passed by the legislature at the first introduction.

Contributed and Selected

COMPARATIVE INVESTIGATION OF THE COMPOSITION OF ICHTHYOL-AMMONIUM AND SOME OF ITS SUBSTITUTES.*

H. BECKURTS AND H. FRERICHS.

Ichthyol-ammonium, also known as Ichthyol, is the well-known water-soluble, organic sulphur preparation of the firm Cordes, Hermann & Co. in Hamburg. For more than 25 years it has proven a very valuable medicinal agent and it therefore need not seem surprising that during the past years a number of similar preparations have been placed upon the market, which have been advertised as "equally as effective as Ichthyol" by their manufacturers. Chemical analyses by different experts have however shown that these products, which to all appearances resemble the original, differ considerably among themselves, and particularly from Ichthyol in chemical composition.

Both physicians and pharmacists have recently complained of increased substitution of original preparations by inferior products. The following investigations were therefore conducted with a view of determining if specimens of Ichthyol obtained from different pharmacies are of uniform composition and if the better known similar preparations sufficiently resemble Ichthyol to be regarded as available, from the pharmaceutical point of view, for purposes of substitution.

Several articles have already appeared which deal with the character and composition of the preparations in question. The authors point out that the chemical analysis can only comprise the determination of the dried residue and the content of ammonium sulphate, the total ammonium and the total sulphur, since the composition of these preparations is not uniform. We are dealing with the watery solution of the ammonium salts of organic sulpho-acids, sulphones, ammonium sulphate, and small amounts of hydrocarbons poor in sulphur, which are chiefly responsible for the characteristic odor of Ichthyol.

A short resumé of previous analyses is in place. The values obtained for total sulphur are not directly comparable since the methods of Carius will frequently give too low values with preparations rich in sulphur, such as Ichthyol. The amount of sulphur combined as sulphide or not oxidized cannot be determined directly since no reliable method is at our disposal. It will be necessary to determine the amount of sulphur occurring in the form of sulpho-compounds and as sulphates and to subtract both from the total amount of sulphur present. It follows that the values obtained for sulphur occurring as sulphide are also not directly comparable.

Kothmeyer¹ determined the difference between Ichthyolum germanicum (Ichthyolammonium of Cordes, Hermann & Co. of Hamburg) and the substitute

*Translated in full from Arch. d. Pharmacie, 1912, No. 6 and 7. From the Pharmaceutical Institute of the "Herzoglichen Technischen Hochschule" in Braunschweig.

Ichthyolum austriacum (of G. Heli & Co. in Troppau, now called Petrosulfol). The German preparation (dried at 100°) yields 45% dried residue, and 21.1% of this was total sulphur. Petrosulfol yields 42-43% dry residue, with 16.3% total sulphur.

Goliner² states that the dry residue obtained from Isarol contains 17 to 19% sulphur.

G. J. Witol³ investigated Petrosulfol and obtained a dry residue of 54.71%, with 16.27% sulphur.

R. Thal⁴ carefully studied the following preparations: 1. Ichthyol of the firm Cordes, Hermann & Co. of Hamburg; 2. Ammonium sulphoichthyolicum (now called Isarol), of the Gesellschaft fuer chemische Industrie of Basel; 3. Trasulfan of Riechold & Co. in Binningen (Switzerland); and Ammonium sulphoichthyolicum (now termed Piscarol) of Luedy & Co. in Burgdorf (Switzerland).

The author obtained the following percentages:

	1	2	3	4
Dry Residue	55.66	54.48	37.71	39.83
Total Ammonia	3.15	5.11	1.38	3.32
Total Sulphur	9.70	9.42	5.30	5.75
Ammonium Sulphate	5.72	12.94	1.93	8.05
In the organic dried substance there was:				
Ammonia	3.36	4.28	2.48	3.93
Total Sulphur	17.68	15.14	13.66	11.95
Sulphur was found:				
As Sulpho Compound	6.32	8.04	4.66	7.38
As Sulphide	11.36	7.10	9.00	4.57
Proportion of sulphonie to sulphidic sulphur: 1:1.79		1:0.88	1:1.93	1:0.62

H. v. Hayek⁵ compared the composition of Ichthyol with that of Ichthynat, manufactured by von Heyden in Radebeul. The following is the result of his examination of three samples of Ichthyol and one of Ichthynat "Heyden":

	Ichthyol I	Ichthyol II	Ichthyol III	Ichthynat "Heyden"
Dry Residue	{ 52.69 53.06	{ 62.13 62.51	{ 55.21 54.98	{ 53.89 53.93
Ammonium Sulphate	{ 5.94 6.07	{ 6.77 6.92	{ 6.27 5.86	{ 5.94 6.49
Total Ammonia	{ 2.97 3.02 2.98	{ 3.46 3.64 3.89	{ 2.98 2.99 3.12	{ 3.48 3.33 3.58
Total Sulphur (determined from dry residue)	{ 17.19 17.47	{ 16.35 16.07	{ 17.01 16.39	{ 16.05 16.15
Oxidized Sulphur (determined from dry residue)	{ 4.89 5.19	{ 5.55 4.98	{ 4.77 4.99	{ 4.70 4.57
Non-oxidized active Sulphur (determined from dry residue)	{ 12.29	10.97	11.82	11.46

The same author⁶ also reports upon the analysis of seven samples of Ichthyol of Cordes, Hermann & Co. in Hamburg obtained in different cities in original packages:

	No.	ICHTHYOL.							
		1	2	3	4	5	6	7	Greatest Difference
Dry Residue	54.20	54.09	53.37	53.16	51.70	54.96	53.49		3.26
Ammonia	2.93	2.97	2.97	2.97	3.02	3.00	3.11		0.18
Ammonium Sulphate	5.85	5.84	5.90	5.87	5.95	5.73	5.92		0.22
In percentages of dry residue:									
Total Sulphur	17.89	18.09	17.55	17.38	15.58	16.46	16.25		2.51
Oxidized Sulphur	3.66	3.94	4.16	3.95	4.04	3.77	4.09		0.50
Non-oxidized Sulphur	14.23	14.15	13.39	13.43	11.54	12.69	12.16		2.69

The author concludes that Ichthyol varies considerably in composition, probably owing to the nature of the raw material but that the fluctuations are within reasonable limits. The Ichthyol Company, Cordes, Hermann & Co.,⁷ replies that the fluctuations are in reality not so marked as found by v. Hayek.

F. W. Passmore⁶ has studied the composition of a large number of organic sulphur preparations which have been recommended in the place of Ichthyol. He publishes the following percentages:

	Dry Residue at 100°	Total Ammonia	Total Sulphur	Ammonium Sulphates	Ammonium Chloride	Organic Dry Residue	Total Sulphur (in Organic Dry Residue)	Sulphide Sulphur in Organic Dry Residue
Ichthyol	55.7	3.16	10.72	5.94	0.03	49.73	18.66	12.51
Ichthyinat ...	53.5	3.53	8.24	6.60	0.04	46.86	14.19	6.85
Ichthosan	53.9	2.74	8.24	1.69	0.30	51.91	15.08	6.70
Isarol	54.3	2.82	8.67	2.76	0.07	51.47	15.54	7.82
Lithyol	50.8	4.50	7.57	10.35	1.23	39.22	12.90	4.07
Petrosulfol ...	60.7	2.54	10.07	trace	0.27	60.43	16.66	9.11
Piscarol	50.7	3.75	7.82	9.28	trace	41.42	13.44	7.27
Fossilol	51.9	3.15	8.57	5.65	0.09	46.16	15.60	8.67
Subitol	47.9	3.33	8.05	7.63	0.16	40.11	15.46	9.08

Our own analyses were made on seven samples of Ichthyol obtained from different pharmacies and the following substitutes (obtained in original packages of 0.5 or 0.25 kg.):

1. Ichthammon of F. Reichelt, limited, in Breslau.
2. Ichthium of the Factory Westend in Charlottenburg.
3. Ichthyinat of von Heyden in Radebeul.
4. Isarol of the Gesellschaft fuer chemische Industrie in Basel.
5. Petrosulfol of G. Hell & Co. in Troppau and Vienna.
6. Pisciol of Hoeckert & Michalowsky, Berlin-Rixdorf.
7. Subitol of Charles Zimmermann & Co., in London.

We determined the dry residue, the sulphur occurring as sulphate, the total sulphur, the total ammonia, and the residue remaining after incineration, according to the methods described below.

The sulphates were estimated as ammonium sulphate. The ammonia occurring as ammonium sulphate was subtracted from the total ammonia and the sulphur present as sulpho-compounds was estimated from the rest as advised by R. Thal⁹. The percentage of sulphides was then found by subtracting the amount of sulphur occurring as sulphates and as sulpho-compounds from the total sulphur.

The following three tables give the values found. Table I refers to the substance directly; table II to the dry residue and table III to the dry residue minus the ammonium sulphate (organic dry residue).

The determination of the dry residue was effected by heating about 5 Gm. of the preparation in a water-drying oven until the loss of weight after several hours drying did not exceed 0.2 percent. It was not considered desirable to heat to constant weight because on drying, other volatile compounds besides water are gradually driven off.

TABLE I.

In Percentages:	Dry Residue	Total Sulphur	Sulphur as Sulphate	Sulphonic Sulphur	Sulphide Sulphur	Total Ammonia	Ammonium Sulphate	Ash
Ichthyol { No. 1.....	56.84	11.27	1.515	2.65	7.105	3.02	6.25	0.074
of Cordes, { No. 2.....	55.86	10.91	1.451	2.71	6.749	2.98	5.98	0.07
Hermann { No. 3.....	55.98	11.055	1.50	2.69	6.865	3.02	6.19	0.07
& Co. ob- { No. 4.....	53.99	10.74	1.45	2.66	6.63	2.955	5.98	0.06
tained from { No. 5.....	55.53	10.855	1.511	2.54	6.804	2.95	6.23	0.05
different { No. 6.....	56.16	11.02	1.18	2.71	6.83	3.01	6.10	0.05
pharmacies { No. 7.....	56.16	11.32	1.465	2.76	7.095	3.02	6.01	0.06
Ichthammon { "Reichelt".....	54.80	10.375	0.355	3.96	6.06	2.48	1.46	0.08
Ichthium	51.86	8.08	1.537	5.01	1.503	4.31	6.34	0.188
Ichthyinat	55.41	8.13	1.743	2.917	3.17	3.46	7.19	0.19
Isarol	52.24	7.19	1.251	2.98	3.259	2.915	5.16	0.08
Petrosulfol	57.45	9.22	trace	4.56	4.66	2.42	traces	0.236
Pisciol (a).....	51.10	8.01	0.925	4.18	2.935	3.21	3.82	....
Pisciol (b).....	52.70	8.33	0.97	4.25	3.11	3.29	4.00	....
Subitol	54.35	8.43	1.35	3.14	2.94	3.10	5.57	0.09

TABLE II.

In percentages of dry residue:		Total Sulphur	Sulphur as Sulphate	Sulphonic Sulphur	Sulphidic Sulphur	Total Ammonia	Ammonium Sulphate
Ichthyol of Cordes, Hermann & Co. obtained from different pharmacies	No. 1.....	19.83	2.67	4.66	12.50	5.31	11.01
	No. 2.....	19.53	2.60	4.85	12.08	5.33	10.72
	No. 3.....	19.74	2.68	4.80	12.26	5.43	11.06
	No. 4.....	19.90	2.69	4.93	12.28	5.47	11.10
	No. 5.....	19.55	2.72	4.58	12.24	5.31	11.22
	No. 6.....	19.62	2.64	4.82	12.16	5.36	10.89
	No. 7.....	20.15	2.61	4.91	12.63	5.38	10.77
Ichthammon "Reichelt"		18.93	0.65	7.22	11.06	4.53	2.67
Ichthium		15.58	2.96	9.72	2.90	8.31	12.22
Ichthynat		14.67	3.15	5.26	6.26	6.14	12.79
Isarol		14.35	2.40	5.70	6.25	5.58	9.88
Petrosulfol		16.05	traces	7.94	8.11	4.21	traces
Pisciol (a)		15.73	1.81	8.18	5.74	6.28	7.48
Pisciol (b)		15.80	1.84	8.06	5.90	6.24	7.59
Subitol		15.51	2.48	5.78	7.25	5.70	10.25

TABLE III.

In percentages of organic dry residue:		Total Sulphur	Sulphonic Sulphur	Sulphidic Sulphur
Ichthyol of Cordes, Hermann & Co. obtained from different pharmacies	No. 1.....	19.28	5.24	14.04
	No. 2.....	18.96	5.43	13.53
	No. 3.....	19.18	5.40	13.78
	No. 4.....	19.36	5.55	13.81
	No. 5.....	18.95	5.16	13.79
	No. 6.....	19.06	5.41	13.65
	No. 7.....	19.66	5.50	14.16
Ichthammon "Reichelt"		18.78	7.42	11.36
Ichthium		14.38	11.07	3.31
Ichthynat		13.21	6.03	7.18
Isarol		13.26	6.32	6.94
Petrosulfol		16.05	7.94	8.11
Pisciol (mean of a and b)		15.08	8.78	6.30
Subitol		14.52	6.44	8.08

The determination of total sulphur in organic sulphur preparations according to the method of Carius presents difficulties since heating the substance in sealed tubes under pressure at 300° for several hours will not always suffice for complete oxidation. This is particularly the case where much sulphur is present as in Ichthyol. W. Hinterskirch¹⁰ has obtained reliable results with this method only when he employed less than 0.3 of the preparation or if, after releasing the pressure and again sealing the tube, the heating was repeated for several hours on the following day. The method of Carius is laborious and long-winded and requires a furnace. Hinterskirch (l. c.) has therefore recommended a method thoroughly tested by him, and involving the use of sodium peroxide as oxidizing agent. The authors, however, find that oxidation with pure sodium peroxide is accompanied by violent explosions, while if potassium carbonate is used as diluent, considerable sulphur may be lost. The amount of water present also plays a role. Definite proportions must therefore be used, and the heating must be conducted in a special way, else the results will not agree with those obtained by the method of Carius.

The method of Hinterskirch therefore hardly presents advantages over the method of Carius. It is not easy to carry out, hence that a chemist not an expert is not apt to get accurate results.

The following experiments were carried out to discover a practical method. At first, the substance to be investigated was fused with sodium carbonate and saltpeter in a tube sealed at one end. About 0.8 grammes Ichthyol were dried in the drying chamber at about 100° with 5 grammes of a mixture of 1 part saltpeter and 7 parts anhydrous sodium carbonate. The dried mass was thoroughly rubbed up with the soda-saltpeter mixture and then filled into a tube of potash glass, sealed at one end. Traces of Ichthyol remaining in the dish were removed by further portions of the mixture until the tube contained about 40 grammes in all. The tube was then heated, beginning at the open end, in a combustion furnace up

to red heat. The escape of bluish vapors with peculiar odor could not be avoided. After cooling, the tube was broken and its contents dissolved in water. The solution was acidified with hydrochloric acid and evaporated to dryness to allow of the separation of silicic acid. The residue was taken up with hot water containing hydrochloric acid. In the filtrate, the sulphuric acid was precipitated in the usual way as barium sulphate. The figures obtained, however, were too low, hence this method was not considered suitable for the determination of sulphur in Ichthyol. It is probable that during the heating, volatile sulphur compounds escape undecomposed. The oxidation of the sulphur in a closed tube is therefore a more reliable procedure.

The reason why the determination of the total sulphur according to the method of Carius often gives too low figures is probably to be explained by the fact that the sulpho-acids will to a certain degree resist oxidation with nitric acid. Hinterskirch (l. c.) found that the results will be too low by 1.5 to 2% even if the heating is continued for several hours at 300°. In order to convert all the sulphur contained in Ichthyol into sulphuric acid, the following method was employed: About 0.3 to 0.5 gramme Ichthyol was heated with about 4 cc. fuming nitric acid for about 9 hours in a sealed tube. The temperature was slowly raised up to 260 to 275 and kept there about 6 hours. After opening the tube, the fluid was washed into a porcelain dish, rendered alkaline with 8 grammes sodium carbonate, and evaporated to dryness. The dried mass was then placed in a large nickel crucible with tightly fitting cover. The crucible is fitted into the opening of an asbestos plate held in a slanting position, so as to avoid the effect of the gas during heating. The crucible is heated with a moderately sized flame until the mass is uniformly molten. After cooling, the contents of the crucible are dissolved in water and acidified with hydrochloric acid. The sulphuric acid was then determined in the usual way as barium sulphate. The following figures were obtained with one sample Ichthyol by this method:

0.4360 g substance gave 0.3525 g BaSO₄, equals 11.14% S.
0.3560 g substance gave 0.2825 g BaSO₄, equals 10.90% S.

With a second sample:

0.3450 g substance gave 0.2675 g BaSO₄, equals 10.65% S.

When the preparation was oxidized according to Carius and the sulphuric acid precipitated directly in the usual way, the following figures were obtained with the same samples:

SAMPLE I.
0.3895 g substance gave 0.3155 g BaSO₄, equals 11.12% S.
0.3240 g substance gave 0.2595 g BaSO₄, equals 10.99% S.

SAMPLE II.
0.3250 g substance gave 0.2540 g BaSO₄, equals 10.74% S.

The same method was employed in determining the sulphur in the following preparations: Ichthium, Ichthynat, Isarol and Subitol, with the following results:

	After oxidation with nitric acid, evaporated with sodium carbonate and fused	Directly precipitated after oxidation with nitric acid.
Ichthium	7.92%	8.06%, 8.08%
Ichthynat	8.03%, 7.96%	8.13%
Isarol	7.45%, 7.48%	7.49%
Subitol	8.40%	8.46%

It follows that the method of Carius is very serviceable in determining the total amount of Sulphur in Ichthyol and similar organic sulphur preparations if 0.3 to 0.5 g. of the substance are heated with about 4 cc. fuming nitric acid for about 9 hours up to 260° to 275°.

Double determinations of the amount of total sulphur in other samples of Ichthyol and its substitutes gave figures which agreed very well, thus 10.92 and 10.90%, 10.84 and 10.87%, 11.37 and 11.27%, 9.50 and 9.47%. This is another proof of the value of the Carius method.

When the substance was heated in the tube up to 300° almost all the tubes cracked. In the few cases where the high pressure was resisted, the amount of sulphur was not found any higher. A temperature of 300° is therefore not necessary. A temperature of 260° to 275° will suffice if the heating is continued for 9 hours and at least 4 cc. fuming nitric acid are employed.

The method of Thal may also be used in determining the total sulphur; it has the advantage of not requiring a furnace. About 1 gm. Ichthyol is evaporated twice with 20 cc. fuming nitric acid each time. The syrupy residue is then mixed with 5 grams of a mixture of 4 parts anhydrous sodium carbonate and 3 parts saltpeter and fused. The solution of the fused mass is acidulated with hydrochloric acid and evaporated to dryness so as to separate off the silicic acid. In the filtrate of the solution of the residue, the sulphuric acid is determined in the usual way. The following figures were obtained for Ichthyol No. 3, a nickel crucible being used:

0.7850 g substance gave	0.6245 g BaSO ₄ , equals	10.93% S.
0.8995 g substance gave	0.7080 g BaSO ₄ , equals	10.81% S.
0.9360 g substance gave	0.7395 g BaSO ₄ , equals	10.85% S.

With the method of Carius, 11.055% S were found. The figures obtained thus agree fairly well with those of the method of Carius. The following modification is however recommended since there often will be slight explosion if care is not exercised in heating the residue which has been oxidized with nitric acid, with the sodium carbonate and saltpeter. This is due to the presence of large amounts of not yet oxidized organic matter. It is thus possible that portions of the fused mass may be lost by being ejected from the crucible.

"About 0.5 gm. Ichthyol is evaporated three times with 10 cc. fuming nitric acid each time, and the thick residue is rubbed up with 5 gm. of a mixture of 4 parts anhydrous sodium carbonate and 3 parts saltpeter. As much as possible of this mass is transferred into a capacious nickel crucible, and a few drops of water are used to wash out all remnants from the dish. After drying, the mass is carefully fused. The fused mass is taken up with hot water and filtered. The filtrate is then acidulated with hydrochloric acid and the sulphuric acid precipitated in the usual way as barium sulphate."

The following figures were obtained:

0.4455 g Ichthyol No. 3 gave	0.3600 g BaSO ₄ , equals	11.10% S.
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With the method of Carius an average of 11.055% was obtained.

The amount of sulphur occurring as sulphate could easily be determined by the method of Thal (l. c.). In this sulphoichthyolic acid is precipitated by the addition of fresh white of egg and concentrated hydrochloric acid; the sulphuric acid present in the filtrate is then determined without heating with chloride of barium. Not more than 4 gm. of the preparation are dissolved in about 300 cc. of water. The white of a medium-sized egg, stirred up in about 100 cc. water is then added, and finally 5 cc. 25% hydrochloric acid with enough water to make 500 cc. After shaking, the whole is filtered. The sulphuric acid is determined without heating in 200 cc. of the filtrate by weighing as barium sulphate in the usual manner.

The amount of sulphonic sulphur present could only be determined as suggested by Thal (l. c.). Thal deducts the ammonia occurring as ammonium sulphate from the total ammonia. In the remainder, the sulphonic sulphur is calculated by allowing 17 parts of ammonia to 32 sulphur.

There is no practical method for determining the sulphonic sulphur directly. v. Hayek¹¹ recommends the following procedure for determining the total oxidized sulphur (sulphur occurring as sulphate and as sulpho-compounds): The solution of Ichthyol is acidulated slightly with hydrochloric acid and then precipitated with barium chloride. After having been washed, the precipitate is heated to red heat. According to this author, the sulphoichthyolic acid is precipitated quantitatively as barium sulphoichthyolate. The amount of barium sulphate remaining after heating is supposed to correspond to the oxidized sulphur occurring as sulphate and as sulpho-compounds.

The following experiments will show that the conclusions of v. Hayek are not correct and that only part of the sulphonic sulphur can be weighed in this way as barium sulphate. If organic sulpho-acids are heated under pressure with hydrochloric acid, the sulpho-acid group will be converted more or less completely into sulphuric acid. 1 gm. Ichthyol No. 3 was heated under pressure for some time up to 200° to 210° with 5 cc. fuming hydrochloric acid and 10 cc. water in a sealed tube. The contents of the tube were then diluted with water and filtered. In the filtrate, the sulphuric acid was then precipitated in the usual way as barium sulphate. Depending upon the length of time of heating, the following results were obtained:

on heating for six hours:

1.1300 g Ichthyol gave 0.3260 g BaSO₄, equals 3.95% S.
0.8270 g Ichthyol gave 0.2410 g BaSO₄, equals 4.00% S.

on heating for twelve hours:

1.1630 g Ichthyol gave 0.3400 g BaSO₄, equals 4.01% S.

If the amount of sulphur occurring as sulphate (Ichthyol No. 3 contains 1.5% sulphate sulphur) is subtracted, this would leave 2.5% sulphonic sulphur if the separation of the sulpho-acid group occurs quantitatively.

With Petrosulfol, which only contains sulphates in traces, the following figures were obtained on heating for six hours:

0.9957 g substance gave 0.2245 g BaSO₄, equals 3.1% S.

Since sulphates are almost completely absent, the sulphur found by this method in Petrosulfol must occur as sulpho-compound.

By the method of determining oxidized sulphur according to v. Hayek the following figures were obtained for both preparations:

ICHTHYOL No. 3.
0.6219 g substance gave 0.0915 g BaSO₄, equals 2.02% S.
0.6219 g substance gave 0.0955 g BaSO₄, equals 2.11% S.
The average is 2.065% S.
PETROSULFOL.
0.7451 g substance gave 0.0605 g BaSO₄, equals 1.12% S.
0.7451 g substance gave 0.0615 g BaSO₄, equals 1.14% S.
The average is 1.13% S.

The amount of sulphonic sulphur can be determined by the following calculation: The amount of sulphur found in the form of sulphate is subtracted from the above results and the remainder multiplied by 2, since one atom of barium corresponds to two atoms of sulphur (as sulpho-acid). With Ichthyol 3 we get the following figures: $2.065 - 1.5 = 0.565 \times 2 = 1.13\%$; with Petrosulfol: $1.13 \times 2 = 2.26\%$ sulphonic sulphur. These amounts are considerably lower than those

obtained by us by decomposition with hydrochloric acid. Further experiments showed that sulphonic sulphur cannot always be completely converted into sulphuric acid, and the results often lack uniformity. The above experiments show that Ichthyol contains at least 2.5% sulphur in the form of sulpho-compounds and Petrosulfol at least 3.1%. The real figures are probably still higher since, according to Thal's calculation from the amount of ammonia present, 2.69 and 4.56% will be obtained.

It follows that the figures published by v. Hayek¹² for the amount of oxidized sulphur in Ichthyol and Ichthynat must be too low.

It has been shown by further experiments that the decomposition of the sulpho-acids present in organic sulphur preparations is not complete if the substance is heated with hydrochloric acid to 200° to 210°. With Ichthyol 1 and Ichthium, results agreeing fairly well when calculated from the ammonia content were obtained:

	Decomposition with Hydrochloric Acid	Determined from the Ammonia Content
Ichthyol I.	2.560 resp. 2.450%	2.65%
Ichthium	5.083 resp. 4.903%	5.04%

In the remaining experiments, the results obtained were however considerably lower. When two determinations were made, they did not agree sufficiently. In the case of Subitol, less sulphuric acid was found after heating with hydrochloric acid than by the direct method by the addition of egg albumin and hydrochloric acid. The reason for this could not be determined. From all this it follows that the sulphur combined as sulpho-compounds cannot be recovered quantitatively as sulphuric acid by heating with hydrochloric acid to 200° to 210°. It is therefore necessary that the amount be calculated from the ammonia content.

In order to determine the amount of sulphur present as sulphide, the amount corresponding to sulphates and sulpho-compounds must be subtracted from the total sulphur. A direct method has not yet been discovered.

The total ammonia is determined by distillation as follows: 5 gm. of the preparation are dissolved in about 150 cc. water and distilled after the addition of 10 cc. 50% soda lye and a few granules of zinc. With the aid of a cooler, the distillate is caught in N/2 hydrochloric acid. The excess of acid is titrated with N/2 soda lye, methyl orange being used as indicator. The same figures were obtained where duplicate determinations were made.

The ash was determined by incinerating 5 gm. of the preparation in a platinum crucible at a dull red heat, in every instance, the ash had a brownish red color and consisted chiefly of ferric oxide.

If the analyses of the different preparations be compared, it will be found that uniform figures were obtained with the different samples of Ichthyol except for the amount of dry residue (as high as 2.85% difference, probably to be explained by a loss of water by evaporation after the bottle has been opened in the pharmacies). The greatest variation calculated for dry residue was: For total sulphur, 0.6%; for sulphate sulphur, 0.12%; for sulphonic sulphur, 0.35%; for sulphidic sulphur, 0.55%; for the total ammonia, 0.16%, and for ammonium sulphate 0.50%. Greater uniformity in the preparation of so complex a substance is hardly possible.

Differences in the analyses of various samples of Ichthyol as reported by v. Hayek were not confirmed by us. Inasmuch, as the figures obtained by v. Hayek

for total ammonia and ammonium sulphate agreed among themselves and with our values, it is not likely that the difference in the contents of total sulphur and hence also in sulphidic sulphur will really be so marked as this author states (2.51 and 2.69%). It is more logical to assume that the author's estimation of total sulphur in the sulphur-rich Ichthyol has always and to a varying degree been too low.

The fact that the Ichthyol substitutes vary so much in their composition among each other and also as compared with Ichthyol is probably to be explained by the use of crude oils differing in composition and containing only small amounts of sulphur as sulphides. The action of all these preparations undoubtedly depends upon their content of sulphides. Unna has given special attention to the study of Ichthyol as a water-soluble, organic sulphur preparation. When he first recommended Ichthyol therapeutically he drew attention to the fact that the preparation possesses characteristic properties, and that these are due to the large amounts of sulphur in firm chemical union found in the crude Seefeld oil, and which occur in the finished product chiefly as sulphides.

Whether the processes to which the oil are subjected play an important role is less easy to answer. The present patent concerning the separation of sulpho-ichthyolic acid does not give us sufficient information. Since, however, the substitutes differ so considerably from the original preparation, it seems likely that the special methods of manufacturing these preparations are also of some importance.

From the stand-point of both the physician and the pharmacist it is therefore proper that each preparation should have its distinctive name (Ichthammion, Ichthium, Ichthynat, Isarol, etc.) Our experiments have shown such variations in composition that it would be improper to designate these substitutes "Ichthyol" or "Ammonium ichthyolate," or to regard them as identical with the original Ichthyol.

Ichthyol is a very popular remedy and it would seem but proper to add it to the list of drugs official in the Pharmacopoeia. On the other hand, the preparation cannot be so characterized that its identity and uniformity will always be assured. The description of the Italian Pharmacopoeia, edition 1902, and of the British Pharmaceutical Codex, edition 1911, will not suffice to properly identify so complex a drug. The Italian Pharmacopoeia requires neither a qualitative nor a quantitative analysis of sulphur, and the British Pharmaceutical Codex merely states that an oil containing about 10% sulphur is furnished by the bituminous slate. Our investigations have however shown that the amount of sulphur and the way in which it is chemically combined varies with each preparation. In view of the inadequate directions for testing these preparations it is therefore improper to regard them as identical.

- (1) Wien. klin. Rundschau, 1898.
- (2) Therap. Monatshfte, 1903, 151.
- (3) Pharmaceut. Zentralh., 1904, 198.
- (4) Apoth. Ztg., 1906, 431.
- (5) Wien. klin. Rundsch., 1907, Nos. 7 and 8.
- (6) Pharm. Ztg., 1907, p. 952.
- (7) Pharm. Ztg., 1907, p. 994.
- (8) Midland Drugg. and Pharm. Rev., 1910, 44, 154.
- (9) Apoth. Ztg., 1904, 431.
- (10) Zeitsch. analyt. chem., 1907, 241.
- (11) Wien. klin. Rundschau, 1907, Nos. 7 and 8.
- (12) Wien. klin. Rundschau, 1907, Nos. 7 and 8, and Pharm. Ztg., 1907, 952.

HYDROGEN PEROXIDE SOLUTIONS.*

C. B. JORDAN, PH. C., B. S., M. D., LAFAYETTE, IND.

Having noticed that the retail prices of different commercial brands of hydrogen peroxide varied a great deal, and, knowing that department stores and five and ten-cent establishments gave druggists considerable annoyance by selling certain brands at a ridiculously low price, I determined to investigate the different brands on the market, and I also did some experimental work to determine the best condition for keeping this product and to determine the rate of deterioration when kept under unfavorable conditions. My assistant, Mr. Fisher, and myself have conducted a series of experiments to determine this and have assayed samples from a number of different commercial brands, and this paper has to deal with the results of these experiments and assays.

It might be in order at this time to give a very brief history of the introduction of hydrogen peroxide to the world of medicine, and to note the causes for its rapid rise in importance as a medicinal agent, and as a useful commercial article.

The history of hydrogen peroxide is that of a chemical curiosity rapidly becoming so useful that it can be found in nearly every household, and so important that we have come to feel that it is next to impossible to get along without it.

In 1818 Thenard, a French chemist, first discovered hydrogen peroxide by treating barium peroxide with hydrochloric acid. The barium peroxide was made by heating barium oxide to a high temperature in air. The energy given to the barium oxide by the heat was transferred to a molecule of water, and instead of remaining H_2O it became H_2O_2 . It has been prepared in a pure state by two methods, freezing and distillation under reduced pressure. In the pure state it is a thick, clear, colorless liquid of specific gravity about 1.5. This liquid is quite dangerous in that a number of things may cause it to explode and lose its excess of oxygen with violence. Even particles of dust have done this, and many severe explosions have occurred in laboratories where it was prepared.

The product that we are familiar with is far from dangerous, as we usually obtain it in about 3 percent solution in water, and in this condition it loses all its explosive force, while it still retains its antiseptic properties.

Hydrogen peroxide may be prepared in several ways, but the most common method of preparation is that of treating a metallic peroxide with an acid. Barium peroxide is used probably more than any other metallic peroxide. A number of acids have been used for this purpose, as sulphuric, hydrofluoric, hydrofluosilicic, all of which give insoluble precipitates with barium. We can readily see how the last two acids would be objectionable in the preparation of a medicinal hydrogen peroxide, as the solution might contain fluorine, but in the hydrogen peroxides used in bleaching, these methods are very satisfactory, as any fluorine they may contain will increase the efficiency of the bleaching properties of the solution. In the method given in the Pharmacopoeia of 1890, phos-

*Read before the Indiana Pharmaceutical Association, June, 1912.

phoric acid was used, but this acid is very expensive and the Pharmacopoeia of 1900 did not specify any method, therefore it can be made in any way the manufacturer sees fit to use, provided it corresponds to the tests given in the Pharmacopoeia.

Not all metallic peroxides will give this reaction when treated with an acid, e. g., manganese dioxide, when treated with hydrochloric acid, gives manganese chloride and free chlorine; sodium peroxide, treated with an acid, usually gives a salt of that acid, water, and free oxygen. However, if small amounts of sodium peroxide are added to a weak solution of hydrochloric acid, hydrogen peroxide is formed. This may be a possible explanation of the method used in preparing the cheaper peroxides, as nearly all of them contain sodium and chlorides, and it may be that a commercial sodium peroxide is used in their manufacture.

The importance of hydrogen peroxide is due to its power as an antiseptic and bleaching agent, which in turn is due to its strong oxidizing properties, it decomposing into water and nascent oxygen, the nascent oxygen being the antiseptic and bleacher. It has long been known that a strong oxidizing agent is a good antiseptic, the oxygen destroying the germs by oxidizing them. Chlorine, bromine and potassium permanganate have all been used for this purpose, but hydrogen peroxide has nearly displaced them, as it is a safer and more convenient agent to use.

When hydrogen peroxide comes in contact with blood, pus, or decayed tissue, there is an effervescence due to the exudation that is taking place. This effervescence is especially marked when hydrogen peroxide comes in contact with blood. This has led many people who are not familiar with it to feel that hydrogen peroxide is a dangerous solution. I have known laboring men, using this solution to dress wounds on the limbs of their horses, to rush quickly for soap and water and remove the excess of the solution, fearing that they would be injured by it. I suppose this was due to the fact that they were familiar with phenol, bichloride of mercury, etc., and knew that they were dangerous, and reasoning by analogy, thought that any agent that would cause such an effervescence, must be most powerful and therefore dangerous. The fact that it is not dangerous and is yet a powerful antiseptic explains its great use.

No solution of hydrogen peroxide is valuable unless it will retain its strength, and of two samples, both of which are pharmacopoeial, the one that will retain its oxidizing power the longer, is the one that pharmacists should recommend. A number of solutions of hydrogen peroxide do not retain this power and the manufacturers find it necessary to add something to preserve them. It has long been known that this solution is more stable in an acid solution than in an alkaline or neutral solution, therefore all solutions are acid in reaction. The U. S. P. limits the amount of acid that may be used, and no solution is pharmacopoeial that requires more than 2.5 cc. of N/10 potassium hydroxide to neutralize 25 cc. of the solution. It is surprising to find that many of them have a higher acid content than is allowed by the U. S. P. By accident it was found that acetanilid would aid in preserving these solutions. A chemist was attempting to form a combination between acetanilid and hydrogen peroxide and was unsuccessful in this attempt, but noticed that the sample containing acetanilid retained its strength much longer. This was a trade secret for years, but now it is known to all and nearly

all manufacturers use it as a preservative, usually of the strength of 3/16 gr. per fluid ounce. The chemistry of the action of acetanilid in this connection is not understood, and it stands out as one of the things that men have learned experimentally and that chemists are not yet able to explain. The small amount of acetanilid used has no injurious effect and adds wonderfully in preserving the solution. Some claim that the acetanilid acts as an antiseptic, but I do not believe that this has been proven. We have on the market today a number of brands of hydrogen peroxide that do not use acetanilid to preserve them, and yet they do not deteriorate more rapidly than do solutions that do not contain acetanilid, therefore it seems that acetanilid is not always necessary to preserve this solution.

First, I wish to call your attention to the chart showing the results of keeping this solution under different conditions.

Considering the first two results, it is made plain that a solution kept in a bottle stoppered by cotton retains its strength much better than when contained in a bottle stoppered with cork. You will note that this is true in a number of cases shown on this chart. In some cases the solution gained in strength. I think that the explanation of this is that with a cotton plug there is quite free access of air and the water evaporates more rapidly than the hydrogen peroxide decomposes.

If the container is stoppered with cotton, the amount of hydrogen peroxide is not increased, but the percentage of it is increased because of the loss of water.

I wish to call your attention to the fact that solutions that were kept in the basement were more stable than those kept in diffused light, and those kept in diffused light were much more stable than those kept in the sunlight. Of two samples kept in the sunlight, one lost 98 percent and the other 99.9 percent. While the one kept in the amber bottle in the sunlight lost but 65 percent.

It seems to me that these facts lead us to conclude that pharmacists should keep their stock of peroxides in the basement and display but few bottles to the trade.

The fact that this solution decomposes so rapidly in the sunlight, should be impressed upon the buyer and they be instructed to insert a plug of cotton in the neck of the bottle and store it in a dark, cool place.

You will note the wonderful difference in rate of decomposition between solutions in colorless bottles and those in amber colored bottles, especially if those bottles are exposed to the direct rays of the sun, yet there are manufacturers today who put out their products in colorless bottles.

Many more interesting facts might be noted from the study of the "Loss %" column in this chart, but I will leave that for your consideration later.

Turning your attention to the results of the assays of different commercial brands of peroxide as shown in Chart B, you will note that most of them are nearly U. S. P., as far as the strength of the solutions are concerned. In justice to the Albany Chemical Co. and to Squibbs & Sons, I wish to explain that the sample from the Albany Chemical Co. was purchased in open market and I have no way of knowing how old it was before we assayed it; and that in case of the sample from Squibbs & Sons, we had it in our basement for two years, therefore it is not fair to them to compare this sample with a fresh one. I bring it in here to illustrate that some solutions of hydrogen peroxide do not keep well unless a preservative is used. You will note that Squibb & Sons do not use a preservative.

EFFECT OF VARYING CONDITIONS ON SOLUTIONS OF HYDROGEN PEROXIDE.

Sample	Basement	Diffused Light	Sunlight	Nov. 25 1911	Jan. 11, 1912	Mar. 12	May 7	Loss %
Eimer & Amend. Hydrogen Peroxide U. S. P. Contained 3/16 gram acetanilid.	Colorless bottle cotton plug. Colorless bottle cork.	Colorless bottle cotton plug. Colorless bottle cork. Amber bottle cork.	Sunlight	3.19	2.70	2.86	2.99	6.6
				3.19	2.60	2.50	2.35	16.3
				3.19	2.68	3.00	out	6.00
Purchased Sept. 24, 1911. (In colorless bottle un- closed.)	Colorless bottle cotton plug. Amber bottle cork.	Colorless bottle cotton plug. Colorless bottle cork. Amber bottle cork.	Sunlight	3.19	2.36	1.94	1.39	56.6
				3.19	2.38	2.05	1.58	50.5
				3.19	0.36	0.07	0.06	98.00
Oakland Chemical Co. Dioxogen, Purchased Sept. 24; claimed 12 vol. H ₂ O ₂ .	Colorless bottle cotton plug. Amber bottle cork.	Colorless bottle cotton plug. Amber bottle Cork.	Sunlight	3.19	0.11	0.009	0.004	99.9
				3.19	2.32	1.76	1.12	65
					Jan. 12 3.48 3.48	Mar. 12 2.98 3.58	May 7 3.83 2.98	97 gain 14.4
Marchands Medicinal Hydrogen Peroxide, (Colorless bottle in carton.)	Colorless bottle cotton. Amber bottle cork.	Colorless bottle cotton plug. Amber bottle Cork.	Sunlight	3.48	3.48	2.89	1.28	63.2
				3.48	3.48	2.50	1.35	61.2
					2.05 2.05	2.11 1.81	2.24 1.18	9.2 gain 28.
Marchands Hydrozone, 30 vol. H ₂ O ₂ . (Colorless bottle in carton.)	Colorless bottle cotton plug. Amber bottle cork.	Colorless cotton. Amber bottle cork.	Sunlight	2.05	2.05	2.11	out	10.5
				2.48	2.05	1.67	1.22	20 gain
				2.48	2.48	2.31	out	7.0
	Colorless bottle cotton plug. Amber bottle cork.	Colorless bottle cotton plug. Amber bottle cork.	Sunlight	2.48	2.48	2.72	out	10 gain
				2.48	2.48	1.90	out	23.42

STUDY OF COMMERCIAL BRANDS OF HYDROGEN PEROXIDE.

Samples	May 10	May 27	Salts	Assay Acidity	Solids
Parke, Davis & Co. Hydrogen Peroxide, 3% H_2O_2 3/16 gr. acetanilid per fluidounce. Guaranteed U. S. P. Full strength on leaving our laboratory.	2.98		Trace of sulphate	4 cc. of N/10 KOH to 25 cc. of solution	U. S. P.
Hydrox Consumers Co. 3/16 gr. acetanilid per fluidounce. Represents the highest chemical skill in producing absolute purity and potency. Conforms to the U. S. P. requirements, having the additional advantage of potency. Last drop as potent as the first.	2.61	2.5	Heavy with sulphate and chlorides	47 cc. of N/10 KOH to neutralize 25 cc. of sol.	U. S. P.
Albany Chemical Co. Hydrogen Peroxide, 3% H_2O_2 , 1/6 gr. acetanilid per fluidounce. Guaranteed to be unsurpassed in purity, strength and keeping qualities.			Trace of sulphate Excess of chloride	U. S. P.	U. S. P.
Western Peroxide Co. Hydrogen Peroxide, 10 vol. H_2O_2 . U. S. P. H_2O_2 3/16 gr. acetanilid per fluidounce. 6 oz. 15c. Guaranteed. Serial No. 25940.	2.5	2.39	Trace of sulphate Excess of chloride	4.05 cc	U. S. P.
Squibbs & Sons. Hydrogen Peroxide (two years old). 10 vol. H_2O_2 , made by special Squibbs process.	0.67		Trace of sulphate Excess chloride	39.4 cc.	U. S. P.
Hydrox Hydrogen Peroxide. Hydrox Chemical Co. 10 vol. H_2O_2 . U. S. P. 3%. 3/16 gr. acetanilid per fluidounce. Last drop as potent as the first. Serial No. 2685.	2.68	2.5	Trace of sulphate	U. S. P.	U. S. P.
Hydrox. (Same as above. Sold at 9c per pint on sale. Regular price 25c.)	2.82		Heavy with chloride and sulphate	U. S. P.	U. S. P.
Oakland Co. Dioxogen. 12 vol. H_2O_2 .	3.55		Trace of chloride	U. S. P.	U. S. P.
Menthymine. Hydrogen Peroxide. Billings, Clapp & Co. 3/16 gr. acetanilid per fluidounce. For the toilet. An improved preparation representing all the valuable properties of the ordinary peroxide. (Contained menthol and was colored.)	0.24		Trace of chloride	30 cc. of N/10 KOH to neutralize 25 cc. of	Little higher

You will notice that a great many of these samples contain an excess of chlorides or sulphates, although the U. S. P. gives tests for these salts. You will also notice that in some cases the acidity is much higher than that allowed by the U. S. P., namely 2.5 cc. of N 10 potassium hydroxide to neutralize 25 cc. of solution. Again I wish to say, in justice to Squibb & Sons, that this sample tested much higher in acid content than did their samples assayed by the government chemists. I do not know whether this was due to its being an old sample or not.

You will notice that menthymine was very low in hydrogen peroxide content and it contained menthol and a coloring agent.

It is interesting to note the difference between the claims of companies as shown in the column marked "Samples" and the result of the assay of their samples.

In conclusion, I wish to state that many solutions of hydrogen peroxide on the market today are very good, although they do not meet all of the tests of the U. S. P., and I do not believe that pharmacists can afford to carry only the high-priced standard varieties, and look with contempt upon the cheaper varieties carried by department stores and five and ten-cent establishments. I asked my students to purchase samples of hydrogen peroxide to assay, and two of them brought in samples of the same product manufactured by the same company; one had obtained a two-ounce sample at a drug store for fifteen cents, the other a four-ounce sample at a department store for ten cents. Such deals as these lead the laity to believe that pharmacists are charging an excessive price for their material. It would seem to me that it would be better to carry a good U. S. P. article and charge enough for it to make a reasonable profit, and also carry a little of the cheaper, inferior article and display them together, meeting the department store on the price of the cheaper article, and then explain to the purchasing public why one article is better and consequently more expensive than the other. I believe you will sell but little of the cheaper grade of material, and you will hold the confidence of your customers.

THE MAN WITH INITIATIVE.

All the great prizes of this world are reserved for those who possess initiative.

Initiative has been defined by one of our most versatile writers as "doing the right thing without being told, and the next best thing, to do the right thing after being told once." But we want a more practicable and understandable meaning of this marvelous quality.

Let us say that any individual who always is, to a large degree, helpless, depending upon some force outside of himself to bring out his usefulness, lacks initiative. A man without initiative is a man that cannot get up steam, pick out a course and steer away to his destination without the help of somebody else.

But the man with initiative is a live wire. This is the kind of men for whom good positions are going begging every day.—*Western Druggist*.

Papers Presented to Local Branches

CHLOROPHYLL¹

CURT P. WIMMER, M. A., PHAR. D., NEW YORK CITY.

The Dutch scientist, Ingenhous, was probably the first one to discover that carbon dioxide is assimilated by the plant. This was in 1779. His observations were confirmed by Theodore de Saussure, of Geneva, in 1804. Their announcements caused a sensation and were thoroughly ridiculed and really not accepted until Liebig's time. The name Chlorophyll was given to the green coloring matter of the plant by Pelletier and Caventou in 1817. This term "chlorophyll" applies strictly to the coloring matter and not to the so-called chlorophyll granules of the plant cell.

Chlorophyll does not occur alone, but always associated with two yellow coloring matters, namely, Carotin and Xanthophyll. These substances are embedded in granules of albumenoid composition. The shape of these granules is, in most plants, that of a lentil. In some algae we find them, however, in the shape of bands, or plates or stars. In a few cases, the chlorophyll is evenly distributed over the entire plasma. In the higher forms of plants, we find chlorophyll bodies in all *green* plant parts, namely, in the leaves, and here again in or below the palisade cells which line the upper side of the leaf, which side is exposed to the light. The chlorophyll bodies, called chloroplasts, consist of one or probably two albumenoid substances of a spongy texture, in the meshes of which the coloring matters, together with other substances (oil), are embedded. The body is surrounded by a very fine plasma membrane. Stoma as well as membrane are soft and plastic; the granules can therefore change their shape readily. A cell densely filled with granules—sometimes we find fifty to sixty granules in one cell—will show them in triangular, quadrangular or polyangular form. The membrane, however, prevents the granules from forming one mass. Upon the death of the cell, the membrane disintegrates and granule-body and contents form one shapeless mass. At the same time, the bright green color is changed to a brown, due to the presence of acid cell juices which can and do now attack the coloring matter. For this reason, our dried drugs, especially those which have not been dried carefully, present a brownish-green appearance.

Besides the coloring matters, we find certain colorless bodies and protein masses in the chloroplast. The chlorophyll is looked upon as the substance which assimilates the CO_2 ; the colorless bodies probably assist in the storing of the starch formed and in changing it into soluble diastase. Under the influence of light,

¹Read at the January meeting of the N. Y. Branch A. Ph. A.

CO_2 and H_2O are changed into starch and this is stored. When the starch production rests (at night) the starch is changed into diastase. The function of these chloroplasts is of greatest importance for the life of the plant as well as for our own. They convert the energy of the sun into vital energy. CO_2 and H_2O are formed into starch and other substances which serve as food for plant and animal.

In plant parts not exposed to light, so-called chromoplasts or bodies containing a yellow coloring matter take the place of chloroplasts. These chromoplasts, however, occur also in plant parts exposed to light, such as certain flowers, and are often formed from the chloroplasts. We have evidence of this in the change of color when apples or oranges ripen.

Starch is the first *visible* product of the chromoplast's photosynthesis, although simpler intermediate compounds are doubtless first formed. This starch is converted into soluble form at night and carried, in solution, into plant parts requiring nourishment.

Several conditions are absolutely necessary for the formation and function of chlorophyll. First of all and most important is light. Most plants fail to produce chlorophyll in darkness, although some do (conifers and maple). Light, especially the red rays, acts as stimulus. The work of chlorophyll cannot be done in darkness, nor can protoplasm produce chlorophyll without it. Plants grown in the dark or at low temperature are called "etiolated." They are of a yellowish color, and turn green on exposure to light. The coloring matter "etioline" is most likely an intermediary substance in the formation of chlorophyll and is changed into this substance upon absorption of red light rays.

Iron is not a constituent of chlorophyll, but it also seems to act as a stimulus upon the living protoplasm to produce chlorophyll. On the other hand, neither light nor iron alone can bring about the production of chlorophyll. The cell must contain certain specific chromoplasts. The cells of animals, fungi and certain phanerogamic parasites do not contain these chromoplasts and do, therefore, not form chlorophyll.

As the presence of certain granules is necessary to form chlorophyll, so will chlorophyll do its work only when in the granule and again then only when contained in the living protoplasmic cell. Isolated chloroplasts continue for a time to absorb CO_2 and give off oxygen. If anaesthetized by ether, they will only absorb light rays, but no longer take up CO_2 nor give off oxygen.

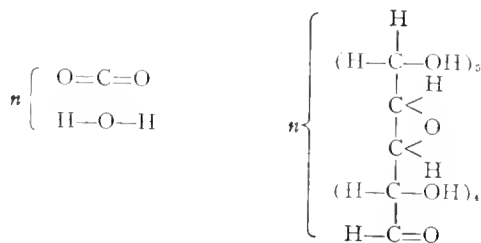
The conditions and factors necessary for the change taking place in the cell are: CO_2 , H_2O , warmth, light of definite wave length, chlorophyll and protoplasm. We might compare the cell to a factory. Light is the stimulus which sets the machinery going. Water and CO_2 are the raw materials, chlorophyll is the machinery itself. Starch is the food product turned out.

How is this wonderful work accomplished? Only very little is known about it.

As I stated before, starch is the first *visible* product of this photosynthetic process, but it is surely not the first and only product. The starch molecule is very complex, carbon dioxide and water very simple in chemical construction. We must assume, therefore, that a number of simpler compounds are first formed and these again are changed into starch.

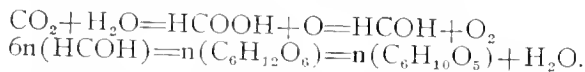
We can represent the change as follows:

graphic:
$$n(6\text{CO}_2 + 5\text{H}_2\text{O}) = n(\text{C}_6\text{H}_{10}\text{O}_5 + 6\text{O}_2), \text{ or}$$



In one plant (*Tropaeolum*) it has been found that the formation of sugar precedes that of starch.

Van Baeyer proposed the following series of changes, as probable:



Objections to this theory are that HCOH and HCOOH are poisonous substances which would kill the cell, unless their conversion into harmless substances is instantaneous. Another series of reactions must, therefore, take place simultaneously.

Emil Fischer believes that the formation of a compound of CO_2 with HCOH precedes that of sugar and starch.

The amount of CO_2 taken up by plants is enormous. 10,000 L. air contain 4.5 L. of CO_2 , which weigh 8-10 gm. Of this 3.11 is carbon. So in 10,000 L. of air we have about 2 gm. C. A tree weighing 5000 kg. contains about 2,500,000 gm. of C. To get this amount, the tree must absorb and assimilate the CO_2 of 12,000,000 cc. of air. This figure is astonishingly large. However, we must not forget that the air contains about 3000 billion kg. of CO_2 . This alone is sufficient to sustain plant life. Furthermore, the supply is constantly replenished by decaying matter, animal breathing, burning of wood and coal and by volcanoes.

Properties: Chlorophyll is an unstable substance. It is destroyed by strong sunlight, most readily by the red rays. This destruction seems to be an oxidation process, as it takes place only in the presence of oxygen. Chlorophyll is readily soluble in ether, alcohol, fatty and ethereal oils, petrolatum, petroleum, carbon disulfide. Alcoholic solutions are emerald green in transmitted light and show a blood-red fluorescence. The spectrum shows seven absorption bands and is absolutely characteristic. Benzene dissolves the chlorophyll and carotin from an alcoholic solution and leaves the xanthophyll in the alcohol.

Two general methods can be used for the separation of chlorophyll from its yellow companions.

Fremy's process: Shake one volume of alcoholic solution of chlorophyll with a mixture of two volumes of ether and one volume of concentrated HCl . Upon separation, the upper layer contains the golden yellow xanthophyll, the lower acid layer is colored bluish-green and contains a decomposition product, phyllocyanin.

Kraus' method: A 65% alcoholic solution of chlorophyll is shaken with twice

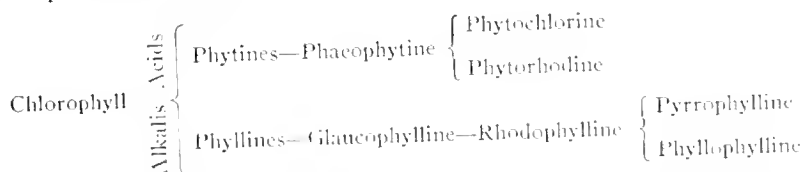
its volume of benzin (.714). The upper layer is green, due to chlorophyll; the lower one is yellow, due to xanthophyll.

Very little indeed was known of the chemistry of these coloring matters until Willstätter and his assistants took up the work. Today we know many interesting facts regarding their chemistry, and thanks to this genial research chemist, a large amount of work has been and is now being done on chlorophyll. Judging by his past most successful work, we can confidently expect that the chemistry of these interesting substances will be completely cleared up within reasonable time.

I will give a summary of his work of the last six or seven years, and in order not to tire you, I will omit all purely chemical discussions and theories and present facts and how they were found.

Hoppe-Seyler, von Tschirch, Schenck, Marchkowsky and many others had experimented with chlorophyll and came to divergent conclusions in many cases.

To obtain chlorophyll in comparatively pure form, Kraus' method was used and improved considerably by the substitution of wood alcohol for ethyl alcohol. Grass, spinach, and many other chlorophylls were used. It was observed that chlorophyll forms a colloidal solution with water. This colloidal solution was used for purposes of further purification. Ether does not extract chlorophyll from it, but its impurities, especially the carotin. The colloidal solution is pale green, turbid, not fluorescent. The chlorophyll can be recovered from it either by salting out and extracting with ether, or by adding an acid, when the chlorophyll is changed to its insoluble form, deeply colored, when it can be extracted with ether. The chlorophyll, thus purified, was subjected to acid and alkali of different strength and under different conditions and a number of reaction products obtained.



We will now take up the action of acids. Nitric acid destroys chlorophyll with separation of a colorless oil, which comes from the alcohol rest of the chlorophyll ester.

Reaction with other acids is marked by a color change and a splitting out of magnesium. The presence of Mg in the chlorophyll molecule was proven beyond doubt in all experiments; 21.2 to 31.2% of MgO is found in the ash. It is very readily split off by acids. HCl in 11% solution changes chlorophyll into a compound, which is soluble in ether with olive-green color. Warmed with alcohol, it assumes a bright red color.

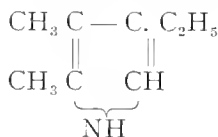
Compounds obtained by action of acids are called "Phytines," those obtained by action of alkalis "Phyllines." Acid action also produces an ester without basic or acid properties—consequently chlorophyll itself is an ester. Phosphorus was not found at any time, consequently an older theory that chlorophyll was similar to lecithin was proven incorrect. On treating an alcoholic solution of chlorophyll with an alcoholic oxalic acid, a product not readily soluble in alcohol was formed.

It was extracted with chloroform, to which it imparts a brown color. Isolated, this substance was called Phaeophytine. It is waxy, almost black; in solution, olive-brown with red fluorescence. With metals, zinc, copper or iron, it becomes chlorophyll-like. When this phaeophytine is saponified with alkali, it splits off an alcohol, $C_{20}H_{40}O$, which was called Phytol, and which was subsequently found in all chlorophylls.

In contradistinction to action of acids, alkalis do not split off the magnesium; the principal products of alkaline hydrolysis are deep green alkali salts which contain the Mg in complex form, most likely attached to the nitrogen.

On treating chlorophyll with alcoholic KOH on the water bath, it takes on a beautiful fluorescence. At $140^{\circ}C$., a crystallizable compound is formed. At 200° , it changes into another compound, which is red and which is termed Rhodophyllin. All of these still contain Mg. They show marked properties as to crystallization and solubility. To obtain rhodophyllin in pure state, it was necessary to use bomb tubes. In the ash of the compound thus prepared, Willstätter found to his surprise zinc oxide. Upon investigation, this was found to come from the glass. It had replaced the Mg in the molecule. This shows how easily the Mg can be replaced. Further experiments were carried out in a silver cup enclosed in an autoclave. Addition of water precipitated the rhodophyllin, which is purified by NH_4OH extraction of ethereal solution. Upon analysis it was found to be $C_{33}H_{34}N_4O_4Mg$. The present accepted formula for Haemin is $C_{34}H_{34}N_4O_4FeCl$. The difference of the one C atom in such a large molecule may be overlooked and Willstätter believes that the Rhodophyllin is very closely related to Haemin, and surely possesses the same nucleus.

Another chlorophylline, which was called Phylloporphyrine, showed the formula $C_{32}H_{36}O_2N_4$, which corresponds to Haematoporphyrin, a derivative of our blood coloring matter, $C_{32}H_{36}O_6N_4$. They differ only by the O_4 . Both substances must have the same nucleus, for on reduction each one forms Di-methyl-ethyl pyrrol

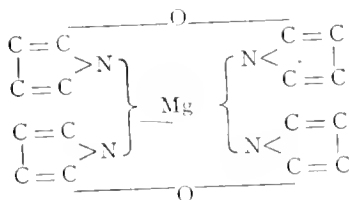


These facts point to a genetic relationship of the two substances, haemoglobin and chlorophyll, although their physiologic functions are entirely different. Chlorophyll contains magnesium, haematin contains Fe; these metals undoubtedly exercise a catalytic action and the assimilation of CO_2 is a function of the basic metal Mg. Plant life is mainly synthetic; carbohydrates, fats and albumens are built up of the simplest inorganic substances. Animal life needs iron to carry on its analytic functions by oxidation and Fe acts as the oxygen carrier.

The question as to whether the chlorophylls of all plants are alike was answered in the affirmative after an examination of several hundred different plant extracts. Discrepancies in the results were found to be due to an enzyme action. When a green plant is extracted with alcohol, an enzyme which accompanies the chlorophyll, becomes active and alcoholizes it; the phytol rest is replaced quantitatively by C_2H_5 . The solvent will show a brownish color. This can be avoided by a rapid extraction, or by addition of a small amount of alkali. Some plants

The chlorophyll of all plants showed the presence of Mg and of 1-3 of its molecule of phytol. The final reaction products of alkalis on phaeophytine were two substances which are the components of chlorophyll: one bluish-green, photochlorine; the other yellow-green, phytorhodine, which were isolated and analyzed. A structural formula was found for phytol.

Absolutely pure chlorophyll was obtained and found to be crystallizable, forming a blue-black powder with metallic lustre, readily soluble in alcohol and ether, but insoluble in benzine. The solutions are blue-green. It contains 5% MgO in its ash, its composition corresponds to $C_{55}H_{72}O_6N_4Mg$ and most likely possesses the following nucleus:



The yellow coloring matters have also been examined. Berzelius found a yellow substance and called it Xanthophyll. Arnaud found another substance the formula for carotin to be $C_{40}H_{56}$, a hydrocarbon. (Benzin extraction), and named it Carotin. Willstätter isolated them and examined them. He found Xanthophyll is obtained by precipitation from alcoholic solution with petroleum benzin. It crystallizes readily, forms red plates. Its formula is $C_{40}H_{56}O_2$. We have here a simple relation to carotin. Xanthophyll is its oxide. Both are unsaturated and absorb oxygen readily, even by mere exposure to air. They probably are the vegetable oxygen carriers.

SOME ACTIVITIES OF THE AMERICAN MEDICAL ASSOCIATION AND THEIR VALUE TO PHARMACISTS¹

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The American Medical Association is ruled by a body of representatives called the House of Delegates. These are elected by the several state associations, by

¹Read before the Chicago Branch A. Ph. A., Nov. 26, 1912.

the scientific sections of the Association, and appointed by the surgeon generals of the Army, Navy and Public Health Service of the United States. One delegate is elected from each of these sources, except from the affiliated state societies, in which the number of delegates to which the constituent society is entitled depends on the number of its active members. The House of Delegates elects a Board of Trustees consisting of nine members, which board has charge of the property and of the financial affairs of the Association.

One of the most important functions of the American Medical Association is the publication of its journal, *The Journal of the American Medical Association*. This is the largest, and by those competent to judge, said to be the best weekly medical journal in the world. It has an average circulation of about 56,000 copies. Each semi-annual volume contains an average of about 2200 pages, or about 4400 pages per year.

The Association publishes a directory of all of the physicians in the United States. This gives the doctor's name and address, date of his birth, his college and year of graduation, the date of his license to practice, and other useful information.

Most of the work of the Association is done by Committees and Councils appointed for the purpose. Nothing need be said here about the Committees as they are generally similar to committees of other scientific societies. There are four Councils, viz., The Judicial Council, the Council on Medical Education, the Council on Health and Public Instruction and the Council on Pharmacy and Chemistry.

The Judicial Council.—The Judicial Council consists of five members. In a way it is a kind of society court in which all kinds of controversies in which the Association or one or more of the constituent societies, is a party are settled.

"* * * At its discretion it (the Judicial Council) may investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public. * * *"

The Council on Health and Public Instruction.—The Council on Health and Public Instruction consists of five members. Its work embraces (a) legislation, (b) organization, (c) public instruction, (d) defense of medical research, and (e) public health.

"Through its Council on Health and Public Instruction the American Medical Association is seeking to coordinate the medical profession and the public; to unite all forces working for improvement in health conditions in cities, states and the nation; to enlighten the public on the aims and purposes of the medical profession for the prevention of disease, and to strengthen public confidence in the profession and its work."

This Council regularly sends to the newspapers and to agricultural, labor, religious and similar periodicals abstracts of analyses of fraudulent "patent-medicines," and of editorial articles and current comments on matters relating to public health which have appeared in *The Journal of the American Medical Association*.

The Council on Medical Education.—The Council on Medical Education also consists of five members. Some of its duties are to:

1. To make an annual report to the House of Delegates on the existing conditions of medical education in the United States.
2. To make suggestions as to the means and methods by which the American Medical Association may best influence favorably medical education.
3. To act as the agent of the American Medical Association under instructions of the House of Delegates in its efforts to elevate the standard of medical education.

A representative of this Council visits every medical school in this country at least once in two years. The information obtained is classified and those colleges receiving a rating of 70 percent or above are listed in "Class A," those receiving a rating of from 50 to 70 percent in "Class B," and those rated below 50 percent in "Class C." "Class A" colleges may be considered, therefore, as acceptable colleges, those of "Class B" as colleges which require certain definite improvements to make them acceptable and those of "Class C" as colleges in which complete reorganization would be required to make them acceptable.

The Council believes that the coming American standard for medical education will be: A four-year high-school education; a year or two in the university laboratories of chemistry, physics and biology; four years in the medical school and a clinical year as an intern in a hospital.

It will be seen that while this work is somewhat of the nature aimed at by the American Conference of Pharmaceutical Faculties for schools of pharmacy it is much more comprehensive. For the respective professions, I believe, that the Council on Medical Education is much more potent for the raising of educational standards than is the American Conference. Since the work on medical education of the American Medical Association became better appreciated a number of schools which were at first placed in "Class B" have increased their equipment, lengthened their courses, or otherwise made changes for the better, so that they are now placed in "Class A." The work of this Council is indirectly of benefit to pharmacists, in that it tends to make better and more scientific physicians. The work of this Council should be an object of emulation for the American Pharmaceutical Association.

The Council on Pharmacy and Chemistry.—For many years previous to the establishment of the Council on Pharmacy and Chemistry the medical profession had been at the mercy of dishonest manufacturers of proprietary medicines. The simplest drug mixtures were exploited as "new synthetics" under the most outrageously extravagant claims for therapeutic worth. Numerous cod-liver oil preparations that contained little or no cod-liver oil were foisted upon the helpless doctor. Consumption remedies that were practically nothing but cane sugar were sold at high prices. Detail men from the manufacturing houses, having no knowledge of medicine or pharmacy, brazenly assumed to teach physicians how to treat disease. Every imaginable kind of fanciful fraud was advertised to the profession. Year after year committees were appointed by the American Medical Association in an endeavor to remedy these evil conditions. Resolution after resolution condemning the practice was passed but the manufacturers went serenely on humbugging the doctor and his patients. One of the methods that was hit upon by the Association for compelling the manufacturers to tell the truth about their products was to compel the divulgence of the formula for every preparation that was to be advertised in the Association's Journal. The medical profession then thought that the perplexing problem had been settled. But immediately some of the most wonderful "formulas" appeared in the advertisements in medical journals! Many were chemical impossibilities. Doubtless to physicians they were sometimes imposing. To chemists they were often extremely absurd. A thorough trial of the new system demonstrated that conditions were but little better than before. After much deliberation the American

Medical Association established the Council on Pharmacy and Chemistry which began the difficult task of "separating the sheep from the goats" in proprietary medicines.

The work of the Council on Pharmacy and Chemistry has a more direct bearing on pharmacy and exerts a greater influence upon pharmacists than the activities of any or all of the other councils of the American Medical Association. To quote:

"The Council on Pharmacy and Chemistry was established in 1905, primarily for the purpose of gathering and disseminating such information as would protect the medical profession in the prescribing of proprietary medicinal articles. In pursuance of this object, the Council examines the articles on the market as to their compliance with definite rules which are designed to prevent fraud, undesirable secrecy and the abuses which arise from advertising to the laity. Such articles as appear to conform to the rules are accepted and their essential features are described in the annual publication of the Council, the 'New and Non-Official Remedies.'"

The members of the Council on Pharmacy and Chemistry have been chosen for their peculiar fitness for the several lines of investigation required of an advisory body of this nature. Some are practical pharmacists of long experience; others are teachers of therapeutics or of pharmacology in our best colleges; still others are officials which are or have been connected with the enforcement of the Federal Food and Drugs Act; one is editor of the Association's journal. Each is an expert in his chosen field of activity. With the exception of the secretary, who devotes all of his time to the work, the members of the Council serve without pay.

In addition to the sixteen regular members of the Council there are several foreign correspondents and a large force of clinical consultants to which matters are referred from time to time.

In describing the work of the Council on Pharmacy and Chemistry free use has been made of two editorials which appeared in *The Journal of the American Medical Association*¹ some time ago. One of these more particularly considered the work of the Council and the other that of the Laboratory. To quote from the first of these:

"The organization of the Council on Pharmacy and Chemistry, and the publication in The Journal of the work accomplished by the Council, have made more enemies for the Association and its journal than all other activities of the Association combined. When it is realized that millions of capital were and are invested in the manufacture of fraudulent proprietaries and that a large portion of the medical press was and is deriving its existence directly or indirectly from the proprietary interests, it is not surprising that the most strenuous opposition arose when the Council undertook to tell the medical profession the truth about therapeutic frauds.

"Proprietary products submitted to the Council are not hastily or superficially examined, but to each the most painstaking and careful consideration is given. Notwithstanding this, the Council has critically examined and thoroughly considered the claims made for more than twelve hundred products, of which over six hundred have been accepted for inclusion in 'New and Non-Official Remedies.' There are, of course, hundreds of nostrums which on their face are so plainly fraudulent that no intelligent physician would be misled by them, and to which, since they stand self-condemned, the Council has not attempted to give more than a superficial examination. It is impossible for those not familiar with the details to realize the amount of work that these figures represent. Nor does the examination of proprietary products which the manufacturers themselves have submitted, comprise nearly all the labors of the Council. A large number of widely advertised preparations for which specious claims are made, have been taken up on the Council's own initiative, and their viciousness made plain to the medical profession.

"In addition to the vast amount of work that has been done on proprietary products, a number of drugs that are neither proprietary nor official have been considered by the Council. Such of these products as seem to have some therapeutic virtue have been de-

¹J. A. M. A., 54, 1210, 1378 (1910.)

scribed in 'New and Non-Official Remedies,' while descriptive and critical reports have been published on those that are without proved value and whose deletion from the already overburdened materia medica would be desirable."

As examples of the above may be mentioned calcium phenolsulphonate, copper citrate, magnesium peroxide and quinine tannate which were accepted after exhaustive studies had been made. Similarly, cactus,* cineraria, echinacea, helonias and strychnine arsenate were rejected.

For many years the food value of meat extracts was believed to be very great. Physicians as well as laymen shared in this belief although it had frequently been shown that the chief value of preparations of this nature lay in their stimulating properties. The Council examined a considerable number of widely advertised proprietary meat extracts and meat juices and showed that they were practically valueless.

Within the past three years the Council has devoted much time and work to the consideration of serums and vaccines and has prepared descriptions of the various products found on the American market, if marketed in accordance with the Council's rules.

The granting of such sweeping monopolistic rights (as is now done under our trade-mark and patent laws) for the manufacture and sale of substances designed to heal the sick is an injustice. The Council is making a study of patent and trade-mark laws in an endeavor to remedy or mitigate these evils.

Having practically completed the examination of proprietary medicines the Council has turned a portion of its attention to problems of therapeutic research. One of these which is not yet completed is a study of the relative toxicity of synthetic salicylic acid and its compounds as compared with that of the acid occurring in plants. For many years certain manufacturers and physicians have maintained that synthetic salicylic acid owing to its impurities is more irritating—more poisonous—and consequently less efficient therapeutically, than that made from natural oil of birch or wintergreen. Others believe that there is no difference. The problem is being attacked by the Council's research committee from its chemical, clinical and pharmacological sides. Its solution will be of great interest to science and may be of great economic benefit to pharmacists since the acid from natural sources costs from ten to fifteen times as much as the other kind. After exhaustive studies upon cats, mice and rabbits the pharmacological investigators have reported² that they could find no difference in toxicity for these animals between the two classes of preparations. The reports of the chemical examination and of the clinical studies, each of which has been carefully carried out, have not as yet been published, but it appears probable that the findings will show that the synthetic salicylates are not less pure than the natural, that the one is not more toxic than the other and that there is no difference in the therapeutic value of the two.

The question of intestinal antiseptics has been studied by the Council's research committee. For a long time it had been supposed by many physicians that certain drugs when taken internally would prevent or greatly retard the bacterial de-

*Compare "Vegetable Drugs Employed by American Physicians," *Journ. A. Ph. A.*, Nov. 1912, p. 1228.

²Sollmann: *Arch. Int. Med.*, 8, 784 (1911), Waddell: *Ibid.*

composition of food in the large intestine with the resultant formation of indol compounds and related poisons. Others have doubted the efficiency of the reputed intestinal antiseptics. At the Council's suggestion a well-known bacteriologist undertook to determine whether there really are any intestinal antiseptics. His results³, while not absolutely conclusive, show that intestinal antiseptics cannot play as important a role in therapeutics as had previously been supposed, and that they are probably of little value.

In addition to this it has included therapeutic research in its activities and the solution of the problems it is undertaking will wield an inestimable influence on the therapy of the future.

The Laboratory of the American Medical Association.—Valuable as has been the work of the Council on Pharmacy and Chemistry to the medical profession it is doubtful if this work could ever have obtained its present far-reaching influence on scientific medicine without the aid of the chemical laboratory of the American Medical Association. Until the establishment of the Council on Pharmacy and Chemistry seven years ago there was no disinterested, reliable body to which physicians could apply for information regarding proprietary medicinal products. In other words, the physician had no means of obtaining unbiased, scientific data on the preparations that he was using daily in the treatment of disease. All information concerning proprietary medicines had to come from those who were commercially interested in their sale. It is needless to say that information from such a source might be expected to be so biased as to be well-nigh worthless for scientific purposes.

By far the most important work of the Council on Pharmacy and Chemistry has been that of determining the actual composition—as compared with the alleged composition—of proprietary medicines. Careful and painstaking chemical analyses were essential to do this. The Council had to depend either on its own members or on commercial laboratories for such analyses. The arduous duties connected with such work, which of necessity had to be of the most careful and painstaking nature, made it impracticable to expect the chemist members on the Council to do it themselves; it was also found unsatisfactory to have it done in commercial laboratories. To meet these difficulties a chemical laboratory was established by the Association.

The composition of medicinal products submitted to the Council is determined in this laboratory and the findings compared with the claims made by the manufacturers. In addition to this numerous questions of a pharmaceutical or chemical nature arising in the editorial department are submitted to the laboratory for solution. But this is by no means all. To quote from the above mentioned editorial on the Association's laboratory:

"A most comprehensive and complete reference library containing the latest and best books on chemistry, pharmacy and the allied sciences, has been collected by the laboratory and every important pharmaceutical and chemical journal published in any language is to be found there. The average reader may not appreciate all that this means. It means that the latest and most reliable data concerning new drugs—proprietary or otherwise—from all parts of the world are now at the disposal of the medical profession of America. The larger manufacturing houses have long realized the value of such data for purely commercial purposes, and they have been careful to keep in touch with what was going on outside this country, and were ever on the watch for anything new which might develop and which could be used by them. Physicians, however, have been among the last to learn the facts

³Harris: J. A. M. A., 59, 1344 (1912.)

regarding new remedies; the information which manufacturers collected so zealously for themselves was not allowed to trickle out among the medical profession until it had been colored, flavored and sophisticated, often out of all likeness with the original, but always into apparent praise of the preparations marketed under trade-marked name."

Since the inception of the laboratory there has been compiled, systematically and thoroughly, probably the most complete collection of proprietary medicine advertising "literature" to be found in the world outside the Bureau of Chemistry—and that in the latter is not available to the public or to the medical profession.

"Such a collection is of inestimable value in tracing, through the devious paths of ever-varying claims for composition and therapeutic virtues, the evolution of many proprietary products now on the market. To see the advertisements put out by different firms a few years ago, and then to compare them with advertisements for the same products today, is in itself a revelation of the steady change—for the better—that has taken place in the commercial standards of pharmaceutical manufacturers.

"The work that the laboratory has done in exposing, through the pages of *The Journal of the American Medical Association*, the frauds connected with the exploitation of some of the 'ethical' proprietaries, is well known. The Council has felt that the medical profession, having vigorously attacked the 'ethical' proprietary evil and, to a large degree at least, set its own house in order, could no longer be accused of inconsistency in exposing the broader and more widely-spread frauds of the 'patent medicine' traffic. Within the past few years, therefore, the laboratory has extended its work to include the examination of some of the more vicious 'patent medicines.'"

In connection with this work there is being made an ever-increasing collection of information on practically every pharmaceutical or medical humbug that has come before the public in recent years. This information is collected from the federal notices of judgment under the Food and Drugs Act sent out by the government, from reports of state and municipal food and drug laboratories and from foreign journals. It can be said without fear of contradiction that there are few reports of the analyses of medicines, if at all valuable, whether made here or abroad that escape the watchful eyes of the laboratory staff. Inquiries for information about medical frauds and fakes are constantly being received. A few of these are answered through *The Journal of the American Medical Association* in its department of Queries and Minor Notes, but the limitations of space make it necessary to answer the great majority by correspondence. This work is done by the laboratory staff or by an official of the propaganda department. As a correlated branch of the laboratory's work, a "testimonial file" has been compiled in the propaganda department which contains the names of several thousand physicians who have written testimonials for various proprietary preparations. As an illustration of the use that is made of this file I will quote from an article in *The Journal of the American Medical Association* of recent date:

"Of 104 physicians who had written testimonials for Duffy's Malt Whiskey, 5 are members of the American Medical Association, and 18 have written testimonials for other nostrums. From our files it appears that some of the 104 testimonial-givers are either advertising quacks or are connected with fraudulent medical concerns. It is not difficult to estimate the scientific value of testimonials that come from such sources."

Doubtless the greatest value of the laboratory work has come through the fearless publicity which *The Journal of the American Medical Association* has given to the laboratory's exposures of the shortcomings of pharmaceutical manufacturers. No firm has been so large or so powerful as to escape criticism of its products or its methods, if criticism were needed; and no firm has been so small or so insignificant as not to receive credit for worthy preparations, if credit were due.

In striking contrast with the fearless attitude of the Association's laboratory in exposing adulterated drugs is the action of the Illinois State Food Commission as instanced in its exhibit of adulterated foods at the Home Makers' Exhibit and Conference, held in Chicago November 18-23, 1912. This is a good illustration of how the most important functions of municipal and state laboratories apparently are sometimes kept in abeyance in fear of manufacturing interests. In this exhibit a large number of specimens of foods which were said to be adulterated were shown. From practically every one of these specimens the name of the manufacturer had been carefully removed or otherwise obliterated. Of what possible use to the housewife was such an exhibit? Had the names of the manufacturers been given, the visitors would have been given information to guide in future buying. Of what use are state food laboratories if not to give publicity to the methods of dishonest manufacturers? It is a mistake to argue that the principal function of state food laboratories is to bring prosecutions against the adulterators of foods and drugs. Manufacturers care little for prosecutions. It is publicity that they fear. It is this that they seek to avoid.

One of the most hopeful signs in pharmacy that I have seen of late is the proposition of the National Association of Retail Druggists and of the American Pharmaceutical Association to establish laboratories of their own. I believe that if these organizations do this and secure directors for their laboratories who are perfectly honest and fearless—men who will not "toady" to the manufacturing interests—the influence of these organizations upon honest, scientific pharmacy will become far more powerful than it has hitherto been.

"What the chemical laboratory of the American Medical Association has accomplished cannot easily be separated from what the Council on Pharmacy and Chemistry has done, for the work and aims of those two institutions have been largely along the same lines. Some things, however, can be credited specifically to the laboratory's account:

"It has shown up the worthlessness of many of the widely advertised 'ethical' proprietaries and has torn the veil of mystery from some of the most vicious 'patent medicines' on the market. It has made ridiculous in the eyes of the profession the impossible and absurd formulas with which the advertising pages of medical journals—*The Journal of the American Medical Association* among them—used to abound. It has proved that many combinations of drugs offered to the profession are pharmaceutical impossibilities and scientifically absurd. It has challenged successfully the attitude previously taken by pharmaceutical manufacturers that no one had a right to publish anything derogatory to their proprietary products."

A feature in the methods of manufacturers that is of great interest to pharmacists and that has occupied the attention of the American Medical Association is the practice of exploiting a definite chemical under a variety of proprietary names and at much higher prices than is charged for the same chemical when sold under its own name. For example, hexamethylenamin is a drug which has certain rather well-defined pharmacological properties. It is sold under such names as "aminoform," "cystamin," cystogen," "formin," "hexamin," "urisol," "uritone," "urotropin," etc. Cases have occurred in which physicians who were ignorant of the identity of these several proprietaries have prescribed two or more of them at once, thus thinking to obtain the combined effects of different urinary antiseptics. Another example of this exploitation of the physician, the pharmacist and the patient to pay the dividends of pharmaceutical manufacturing companies is afforded by phenolphthalein. Like hexamethylenamin this is an individual substance and, like it also, it has pretty well defined pharmacological properties. Pharmaceutical manufacturers sell it either alone or mixed with other laxatives

under such names as "exurgine," "laxaphen," "laxathalen," "phenalein," "phenolax," "thalosen" and others. Prescribing a drug under a catchy, proprietary name tends to lead to the prescribing of the name instead of the drug. Prescribing names instead of drugs is unscientific and should be discouraged by every medical school and medical journal. Pharmacists cannot be expected to stock all of these fancifully named preparations—to do so would be ruinous—yet if they do not do so and supply the drug of one name when another is ordered the pharmaceutical manufacturer stands ready to cry "*substitution*." Another example of the same kind is epinephrin. This is sold as "adnephrine," "adrenalin," "suprarenalin," "supracapsulin," etc.

Another case which is somewhat similar to those named above is that of acetphenetidin and phenacetin. Acetphenetidin is an official drug. As a general thing, physicians use the word "phenacetin" when prescribing acetphenetidin without intending to prescribe any particular brand because they are familiar with this word and are not as familiar with the official term "acetphenetidin." They will doubtless continue to use the term "phenacetin" and apparently there is no sufficient reason for doing otherwise. During the life of the patent on "phenacetin" the word became a familiar one, and the product became generally known by this name. But a coined name for a patented article loses its proprietary character and becomes the common name of the article as soon as the patent expires. That is, when the patent expires, not only the product but also the name itself becomes common property. This principle has been recognized in the courts. Those who formerly controlled the product and the name "phenacetin" evidently recognize this principle, for they have taken no steps to prosecute any of the firms in this country which sell the product openly under the name "phenacetin."

It is interesting to know that the former owners of phenacetin, the Farbenfabriken of Elberfeld Co., now sell phenacetin in this country for about 25 cents per ounce and at the same time sell acetphenetidin for about 6 cents an ounce, the two products being identical in every essential particular. The pharmacist should recognize that *acetphenetidin* is identical with *phenacetin*, and that he may dispense the former when phenacetin is prescribed, provided of course, that no special brand of phenacetin is ordered. Likewise the names "lanolin," "sulphonal" and "trional" are no longer proprietary and the pharmacist should feel free to dispense the official articles, hydrous wool fat, sulphonemethane and sulphonethylmethane on prescriptions calling for these respective substances. It really makes but little difference to the physician whether hexamethylene at ten cents an ounce or urotropin at sixty cents an ounce is dispensed on his prescriptions, since he does not pay for the medicine. But the burden of the injustice falls first upon the pharmacist and finally, of course, upon the public.

Work of this kind by the Council on Pharmacy and Chemistry is of very great value to the individual pharmacist. It seems to me that it is the duty of pharmaceutical journals to bring these and similar facts to the attention of the pharmacists. If the journals themselves are not in position to make the investigations they can at least abstract the investigations made by the Council on Pharmacy and Chemistry. So far as I know but few pharmaceutical journals

have done so up to the present time. But I think that the time is coming when enterprising pharmacists will demand that the journals to which they subscribe shall give them the benefits of whatever studies that are being made upon medicines. The time is coming when glittering generalities and decorous editorial platitudes will no longer be accepted. Plain facts about the composition of medicines and the methods by which they are exploited are being told by the American Medical Association, by state boards of health and by other agencies. And this information is to be had for pharmacists if the pharmacists want it.

Wilbert has well said⁵:

"The growing influence of the Council on Pharmacy and Chemistry of the American Medical Association on the progress of pharmacy in the United States, is well illustrated by the nature and the importance of the references to the work of that Council as reported in *The Journal of the American Medical Association*. The American pharmacist who does not keep in touch with the progress of this work is missing an opportunity to prepare for the new pharmacy which is bound to result from the time and thought that is being devoted to materia medica and therapeutics by leading minds in medicine today. The repeated evidence that there is need for efficient control of all important active medicaments will, in time at least, lead to the recognition that this control can best be exercised at the time of dispensing, because, no matter how efficient an article may have been when made, if deteriorated, it may be not alone worthless, but even harmful.

"No one agency, in this or any other country, is doing more to call attention to the need for the efficient control of medicines and the desirability of developing a thorough knowledge of the possibilities, as well as the limitations of various drugs than is the Council on Pharmacy and Chemistry."

Perhaps a better idea of the work of the laboratory and of the Council may be gained by a study of a few examples taken from a large number of reports.

Waterbury's Cod Liver Oil Compound.—One of the early studies taken up by the Council was that of the so-called "tasteless" cod liver oil preparations. These were variously claimed to be the "active principles of cod liver oil," "extracts of cod liver oil," etc. Waterbury's Cod Liver Oil Compound was examined and found to contain no cod liver oil. Since the manufacturer was prosecuted by the federal government the product has been sold as "Waterbury's Compound," with the statement on the label that it is "made from cod liver oil."

The Council on Pharmacy and Chemistry has always deprecated the prescribing of "shotgun" mixtures, particularly those of a proprietary nature. The laboratory has shown the composition of many of these ready-made mixtures to be unreliable, examples of which are given:

Aromatic Digestive Tablets.—These are marketed by several pharmaceutical manufacturers. Among other ingredients these tablets are claimed to contain hydrochloric acid, definite amounts being claimed in some cases. An examination of six market specimens showed that three were not true to label. The product sold by Parke, Davis & Co., and that sold by Truax, Greene & Co., contained no hydrochloric acid either free or in protein combination, while the Sharp & Dohme brand contained only the merest traces.*

Bismuth, Opium and Phenol Tablets.—These are also marketed by several pharmaceutical manufacturers with definite statements as to the quantities of the several ingredients present. The phenol content in nine brands of these tablets

⁵A. J. P., 83, 566 (1911.)

*Such instances illustrate the futility of prescribing volatile chemicals in tablet combinations. No doubt the right proportions are incorporated at the time of manufacture, but soon volatilize, leaving the tablet below strength, or entirely lacking in that ingredient.—Editor.

was determined and in no case was the claimed amount present. Two years later other specimens of the same brands were purchased and examined and no marked improvement in the phenol content was noted. Specimens obtained directly from the manufacturers were not much better, although one brand contained more than the claimed amount of phenol.

Prescription Fakes.—The public is recognizing that the so-called "patent medicines" are for the most part fraudulent. In order to sell their wares in spite of this, enterprising manufacturers have put on the market a class of nostrums, in some ways simulating a physician's prescription, known as "fake prescriptions." The name of the nostrum appears in the form of pure reading matter disguised as a prescription, or as editorial advice in the "health and beauty" columns of the newspapers. The Association laboratory has examined a number of preparations advertised by this under-handed method and has found that they are usually composed of the simplest and cheapest ingredients. May-a-tone, one of these "fake prescriptions," is claimed to be the secret of the beautiful complexions of the Japanese women. It was shown by analysis to be composed of Epsom salt, 90 percent, and borax, 10 percent. Spurmax is another "fake prescription" which is claimed to be a complexion beautifier. It is composed of 100 percent of Epsom salt colored and perfumed.

Fake "Gall-Stones."—The "gall-stone" swindle is worked by giving the patient an enormous dose of some bland oil such as olive, cotton seed, etc., and following this by a strong, saline purge. This makes the patient pass numerous "masses of undigested soap," which are often of a greenish or yellowish-green color. He mistakes these for gall-stones. Fruitola and Mayr's Wonderful Stomach Remedy are two of these contemptible frauds. Fruitola is composed of olive oil and Seidlitz powders; Mayr's Wonderful Stomach Remedy is olive oil and Rochelle salts.

En-Ar-Co Oil.—This is sold as a cure for a great number of diseases in both man and animals. The nostrum was formerly called the "Wonderful Japanese Oil," but, since it is made in the United States, its name was changed to comply with the Food and Drugs Act. It is composed of about 90 percent of fusel oil and 10 percent of tincture of capsicum. The label on this diabolical mixture declares the presence of 5 percent of grain alcohol, but makes no mention of the presence of about eighteen times as much fusel oil, a substance which is about twenty times as poisonous. Our laws should require such dangerous mixtures as this to be labeled "*Poison.*"

Asafetida vs. Jaroma.—Giving a fanciful name to a well-known drug and advertising it under preposterously extravagant claims is an old trick of the "patent medicine" manufacturer. Asafetida is exploited by this scheme under the name of Jaroma as a remedy for insomnia. Among other absurd claims the manufacturer states: "For the discovery of the Jaroma formula we are indebted to an eminent German Nerve Specialist." Here is the "Jaroma formula" as shown by analysis: Asafetida, 3 grains; gypsum, 2 grains; and red pepper, 1-10 grain.

Dangerous Hair Dyes.—Years ago many hair dyes contained salts of lead, silver or vanadium. Of late years these substances have been largely replaced by paraphenylene diamine, a substance which sometimes causes violent inflammation of the skin. Eau Sublime and Mrs. Potter's Walnut Tint Hair Stain

both contain this poisonous dye. Blindness, insanity and death have followed the use of hair dyes of this class.

Plantoxine.—Some "patent medicines" contain dangerous drugs; some contain well-known drugs; others contain no drugs at all. Plantoxine, which is recommended for hay fever, malaria and la grippe, evidently is one of the latter, since it consists of 100 percent of sugar of milk.

Thacher's Worm Syrup.—A physician reported the serious illness of a child after the mother had given it several doses of Thacher's Worm Syrup. The correspondent who did not see the patient until the fourth day after the ingestion of the first dose, diagnosed the case as one of santonin poisoning and began treatment. The child died. Examination of the nostrum showed that each dose of it contained about $\frac{3}{4}$ grain of santonin. The quantity of the preparation recommended daily for a two-year-old child contained five times as much santonin as a careful physician would prescribe. Yet the manufacturer claimed that "Dr. Thacher's Worm Syrup is scientifically prepared from materials which are known to have a sure and safe effect on the child and to leave it in a healthy condition." Proprietary medicines containing santonin should be labeled "*Poison*."

Chichester's Diamond Brand Pills.—The sale of reputed abortifacients is becoming too common. The Australian Royal Commission, which was appointed a few years ago to investigate the nostrum evil, came to the conclusion that pharmaceutical manufacturing houses were largely responsible for the sale of such preparations. The report of this commission holds that ready-made emmenagogue pills are carried in stock by these houses and it is easy for irresponsible and criminally inclined persons to embark in the nefarious business of selling them. All that is necessary is for such traffickers to order so many "No. —" pills from a pharmaceutical manufacturing house and to use the necessary boxes and labels. A prescription called Chichester's Diamond Brand Pills is said to belong to this class. This preparation was formerly called "Chichester's English Pennyroyal Pills," but since it contains no pennyroyal and is not made in England, it is now called "Chichester's Diamond Brand Pills." A specimen of Chichester's Diamond Brand Pills was examined in the laboratory of the American Medical Association and the pills were found to contain chiefly aloes and iron sulphate. It seems to me that such pharmacists as sell this class of preparations are shouldering a great moral responsibility. The pharmacist must know one of two things. Either these preparations will not do what they are supposed to do or they will. If they will not do what they are supposed to do he is guilty of selling a fraud. If they will do what they are supposed to do what is he guilty of?

Sulphur Dioxide Cure-Alls.—A weak solution of sulphuric acid and sulphur dioxide has been sold as a cure-all under a number of names such as "Liquozone," "Oxytonic," "Radam's Microbe Killer," etc. Each is a poison and each is a humbug.

Midol and Nurito.—Many headache remedies contain acetanilid or acetphenetidin. Since the Food and Drugs Act became effective the presence of these drugs must be declared on the labels of the preparations containing them and the public has justly learned to regard such remedies with suspicion. Recently several of these preparations have come on the market with the claim that they do not contain either acetanilid or acetphenetidin. Examination of two of them,

Midol and Nurito, showed that they contain pyramidon as their chief ingredient. While pyramidon is probably not as dangerous as either acetanilid or acetphenetidin its pharmacology is not well known. Until its dangers and limitations are better understood the public should be protected against its secret sale in "patent medicines."

Murine.—Analysis showed that the composition of Murine is essentially as follows: Borax, 3 ounces; berberine, trace and water, 1 gallon. The estimated cost of a gallon of Murine is five cents. The selling price of a gallon (at \$1.00 per ounce) is \$128.00.

Sanatogen.—Under this name a mixture of cottage cheese and sodium glycerophosphate is sold under the most ridiculously extravagant claims as a remedy for nearly all forms of nervous exhaustion. The manufacturers claim that "Sanatogen contains over 700 percent more tissue-building, life-sustaining nourishment than wheat flour." As a matter of fact 5 cents worth of wheat flour contains as much "tissue-building nourishment" as one dollar's worth of Sanatogen. One dollar will buy about 332 calories of energy in the form of Sanatogen. One dollar will buy 65,400 calories of energy in the form of wheat flour.

Vile-smelling Cure-alls.—An ill-smelling mixture made by boiling sulphur with slacked lime and water and called "Lime-sulphur wash" is largely used by stockmen and fruit growers to destroy vermin. Under such names as "Sulphurro," "Sulphume," "Golden Lotion," "Yellow Lotion," etc., the same mixture is sold for the treatment of a large number of ailments. Apparently its vile odor appeals to those who believe that any remedy which smells indescribably bad or tastes inexcusably nasty is "powerfully good medicine." One cent's worth of lime and five cents' worth of sulphur make a gallon of "Sulphume"—which retails for sixteen dollars.

The "Gas-Pipe" Cures.—A number of fraudulent devices consisting essentially of pieces of nickel-plated gas-pipe filled with inert material (sulphur, sand, clay, charcoal, etc.), and having flexible cords attached, are being sold at high prices as cures for disease. They have neither electrical, magnetic nor radioactive properties. They have no more curative value than empty tomato cans with strings tied to them.

Lung Germine.—This consumption-cure fake is sold by the Lung Germine Company of Jackson, Mich. This company sends out an advertising sheet which is calls the *Lung Germine Monthly Bulletin*. This contains testimonials from victims who are just beginning the Lung Germine "treatment." The company states that:

"The *Bulletin* does not publish letters or reports from cured patients."

Certainly not! It is pitiful that the poor victims who are taking Lung Germine do not more fully appreciate the reason. A two-ounce bottle of Lung Germine sells for five dollars. A specimen was analyzed in the Association laboratory with the following results: Alcohol, 44 percent; sulphuric acid, 4 percent; and water, 52 percent. It is obvious that such a mixture will not cure consumption. The American Medical Association has followed up a number of the testimonials which have been written for Lung Germine and has found that the most of the

writers who had tuberculosis are dead, and that those who are alive never had the disease.

The American Medical Association is endeavoring to aid the public in obtaining a broader conception than it has hitherto had of the great problems connected with public health matters. In pursuance of one phase of this policy the Association contributed an exhibit to the Exhibition on Health of the Fifteenth International Congress on Hygiene and Demography, which was held in the Red Cross building, Potomac Park, Washington, D. C., from September 16 to October 5, 1912. During this period the regular meetings of the International Congress on Hygiene and Demography, the American Public Health Association, the American Dental Association, the Association of Official Agricultural Chemists and other lesser associations, were held in Washington, so that a great number of public health officials, practicing physicians, dentists, and others interested in hygienic measures, were brought within reach of the health exhibit. No admission fee was charged and no account was taken of visitors to the Exhibition, but it is probable that it was seen by more than 100,000 persons. Exhibits were furnished by numerous bureaus and divisions of the several departments of the federal government, by the health departments of nearly every state and large city in the Union, by many charitable and philanthropic societies, and by industrial, educational and even religious corporations.

As noted above the American Medical Association had an exhibit which had been prepared in its propaganda department and its laboratory. This dealt with dangerous or fraudulent "patent-medicines" and with the possible exception of the exhibits by the American Federation of Sex Hygiene, attracted more attention than any other single exhibit in the entire exhibition. Pertinent facts concerning the composition of some of the most widely exploited medicinal humbugs and dangerous "patent medicines" were brought to the visitor's attention by means of placards. The general worthlessness of testimonials was shown and the shameful uses to which "confidential letters" are put by the quacks who receive them, were told by picture and motto. Examples were given showing how the Food and Drugs act in certain ways protects the public against habit forming drugs, and further examples were given showing the limitations of the act in not protecting the public against the presence of many dangerous ingredients in nostrums.

The American Medical Association believes that the public, the pharmaceutical profession and the medical profession must all work together, to abolish the public drinking cup, to exterminate flies and mosquitoes, to eliminate the adulteration of foods, to prevent the pollution of water supplies, to secure adequate disposal of garbage, to insure the proper cleaning of the streets in cities, and, in short, to perform any other tasks which tend to raise the standard of health and lower the death-rate of our citizens.

Reports of A. Ph. A. Committees

REPORT OF COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed standards, are requested to send their criticisms and comments to the chairman of the committee, Geo. M. Beringer, 501 Federal St., Camden, N. J.

APPROVED MONOGRAPHS SUBMITTED AS STANDARDS FOR UNOFFICIAL DRUGS AND CHEMICAL PRODUCTS.

(Continued from p. 255.)

COPTIS.

Goldthread.

1. The dried plant *Coptis trifolia* (Linné), Salisb. (*Fam. Ranunculaceae*).

2. In loose matted masses consisting of long, much branched rhizomes and their small roots, together with the leaves. Rhizomes orange or golden yellow; leaves evergreen, long and slenderly petioled, trifoliate; the segments broadly obovate-cuneate, crenately lobed and toothed with sharp-pointed teeth, prominently veined, smooth, coriaceous, dark green and shining but often drying to a dull brownish hue; flowers, if present, small, solitary, terminating slender scapes, sepals 5-7, oblong, obtuse, deciduous; petals 5-6, pale yellow, small, clubshaped; stamens numerous; odor faint, taste purely bitter without astringency.

COUMARINUM.

Coumarin.

$C_9H_6O_2=146.048$.

1. The anhydride of ortho-oxycinnamic acid $[C_6H_4(CH_3)OC(=O)]$, occurring naturally in tonka, melilot and other plants, or prepared artificially.

2. Colorless, prismatic crystals, having a characteristic fragrant odor and a bitter, aromatic and burning taste.

3. Sparingly soluble in cold, more readily in

hot water; freely soluble in alcohol, ether and chloroform, also soluble in fixed and volatile oils.

4. When heated to between 67° and 68° C. it melts and at about 100° C. it commences to sublime; at 290° to 291° C. it boils without decomposition.

5. It dissolves in an aqueous solution of sodium or potassium hydroxide with a yellow color forming sodium or potassium coumarinate from which carbon dioxide precipitates coumarin. In hot concentrated sodium or potassium hydroxide solution it forms sodium or potassium coumarate from which hydrochloric acid precipitates the Coumarin in colorless needles.

6. A moderately strong aqueous solution of coumarin forms on addition of iodine T. S. a precipitate which is at first brown and flocculent and afterwards on shaking clots together to form a dark green curdy mass, leaving the liquid perfectly clear (distinction from vanillin).

7. Coumarin is not removed from ether solution by ammonia water (distinction from vanillin).

8. On warming 0.1 gm. of Coumarin with concentrated alcoholic solution of sodium hydroxide, adding chloroform and again warming, it should not give an odor of phenylisocyanide (absence of acetanilid).

DAMIANA.

Damiana.

1. The leaves of *Turnera diffusa*, Willd., or of *T. aphrodisiaca*, Ward. (Fam. *Turneraceae*), containing not more than 10 percent of the stems of the same plants.

2. Leaves obovate to lanceolate, 10 to 25 mm. long by 4 to 10 mm. wide, shortly petiolate, obtuse or acute at apex, and with a short cuneate base, sharply 2 to 10 toothed on each side, the veins ascending, generally strong, straight and simple and running to the sinuses of the teeth, but sometimes branched and sending the branches into the teeth, the upper surface smooth and pale green, the lower glabrous or with a few hairs on the ribs (*T. aphrodisiaca*) to densely tomentose all over (*T. diffusa*).

3. Intermixed with the leaves there is generally to be found numerous usually reddish twigs, the young tips and buds of which are grayish with appressed pubescence (*T. aphrodisiaca*) or white with facculent wool (*T. diffusa*). Flower buds, yellowish flowers, and globose pods are generally present.

4. Odor aromatic; taste characteristic, aromatic and resinous.

DEXTRINUM.

Yellow Dextrin.

1. Starch Gum (British Gum, Alsace Gum).

A mixture of soluble carbohydrates, Amylodextrin, Achroodextrin, Erythrodextrin and Maltodextrin, resulting from the incomplete hydrolysis of starch by the roasting process.

2. Transparent, yellowish lumps or granules or a light yellow, glistening, non-hygroscopic, amorphous powder with a peculiar and characteristic harsh feel, possessing a peculiar, somewhat disagreeable odor and a sweetish taste.

3. Soluble in about equal parts of water, forming a thick viscid solution, neutral to litmus paper; insoluble in alcohol, ether and chloroform, but soluble in glycerin.

4. A fresh solution, prepared cold, will be colored wine-red, but not blue on the addition of iodine T. S.

5. Alkaline cupric tartrate V. S. is not changed by a solution of dextrin when cold, but is reduced on boiling.

6. Not more than 5 percent should be soluble in boiling alcohol (limit of dextrose). Upon drying not more than 10 percent

should be lost (limit of moisture), and upon incineration the ash should not be more than 0.5 percent.

7. A solution of Dextrin in distilled water (1 : 20) should not be immediately precipitated by lead acetate T. S. or basic lead acetate T. S., but after the addition of a few drops of ammonia water precipitation occurs (absence of and difference from gums).

8. A solution of Dextrin should not be changed by hydrogen sulphide T. S., even after supersaturating with ammonia water (absence of metals).

DEXTRINUM ALBUM.

White Dextrin (Soluble Starch).

1. A mixture of soluble carbohydrates, Amylodextrin, Achroodextrin, Erythrodextrin and Maltodextrin together with a variable amount of unconverted starch, resulting from the incomplete hydrolysis of starch by the action of acid.

2. A white, glistening, non-hygroscopic, amorphous powder with a peculiar and characteristic harsh feel, odorless and having a sweetish taste.

3. Only partly soluble in water, but completely soluble upon heating. The solution prepared cold is colored wine-red by iodine T. S. and a solution prepared warm is colored blue.

4. Besides the other characteristics and tests given under Dextrinum, white dextrin should also conform to the following test for the absence of oxalic acid:

A freshly-prepared cold aqueous solution should not become turbid by the addition of calcium chloride T. S. or calcium hydroxide T. S.

DULCAMARA.

Bittersweet.

1. The dried young stems and branches of *Solanum Dulcamara*, Linné (Fam. *Solanaceae*).

2. In short sections about 5 mm. or less thick, cylindriaceous, somewhat angular, longitudinally striate, more or less warty, and usually hollow in the center, the thin bark externally pale greenish, or light greenish-brown and glabrous, marked with alternate leaf scars, internally green, the greenish or yellowish wood forming one or two concentric rings; odor slight; taste bitter, afterwards sweet.

3. The ash should not exceed 6 percent.

DRIED EGG ALBUMIN.

(Dried Egg White.)

1. The white of the egg of *Gallus bankiva* var. *domestica* (Order Gallinae), and of other fowl, deprived of its moisture by desiccation at low temperature. It should be free from preservative and should be kept in closed containers in cool dry place.

2. Colorless, grayish or yellowish, transparent or translucent hard and brittle scales or fragments, almost odorless and having only a faint saline taste, and when ignited emitting a characteristic odor resembling burning feathers.

3. Slowly, but not completely, soluble in water, forming a neutral or slightly acid viscid solution which readily putrefies and upon heating to about 75° C. becomes turbid from the coagulation of the albumin. The solubility in water is much accelerated by the presence of alkaline carbonates and phosphates.

Insoluble in alcohol, chloroform or ether and in dried form may be heated to 100° C. without becoming insoluble in water.

4. The aqueous solution is laevogyrate, the angle of rotation being about -38° .

5. Upon incineration, the ash should not be more than 5 percent.

6. The aqueous solution (1 in 10) of Egg Albumin is coagulated by the addition of an equal volume of liquefied phenol. Sodium chloride does not precipitate the aqueous solution (1 in 10) except in the presence of acetic acid. Solutions of soluble salts of iron, copper, mercury, silver and lead produce precipitates when added to the aqueous solution (1 in 10), as does also a solution of tannic acid.

7. The aqueous solution (1 in 10) should respond to the following tests: it is readily precipitated by hydrochloric acid, the precipitate is insoluble in excess of acid; it is coagulated and quickly precipitated by alcohol in excess; on shaking with an equal volume of ether it is coagulated. (Difference from Blood Albumin.)

FERRI GLYCEROPHOSPHAS.

Ferric Glycerophosphate. (Ferric Glycerinophosphate.)

1. Containing a somewhat variable quantity of ferric glycerophosphate $[\text{Fe}_2(\text{C}_3\text{H}_5\text{O}_6\text{P})_3] = 621.86$ corresponding to 14 to 16 percent of metallic iron. It should be kept in well-stoppered bottles, protected from light.

2. Yellowish-green, transparent, amorphous scales or a greenish-yellow powder, odorless and tasteless. Slowly soluble in about 2 parts of water at 25°; insoluble in alcohol. An aqueous solution is acid to litmus paper and becomes turbid when heated.

3. An aqueous solution of the salt (1 in 20) is colored dark blue by potassium ferrocyanide; on further addition of hydrochloric acid a dark blue precipitate is produced.

4. On heating a powdered mixture of about 0.1 gm. of the salt with about 0.5 gm. of potassium bisulphate, pungent vapors of acrolein will be evolved.

5. On incineration, from 47 to 49 percent of a red brown residue should remain, which should not be alkaline to moistened litmus paper.

6. Not more than a slight yellow turbidity should be produced at once on mixing 5 cc. of an aqueous solution of the salt (1 in 50) with 10 cc. of ammonium molybdate T. S., on standing or on warming a yellow precipitate will be formed. (Limit of phosphate.)

7. An aqueous solution (1 in 50) acidulated with hydrochloric acid, should not become more than slightly turbid on the addition of barium chloride T. S. (limit of sulphate).

Another portion of this aqueous solution, acidulated with nitric acid, should not become more than slightly turbid on addition of silver nitrate T. S. (limit of chloride).

8. Dissolve about 0.5 gm. of the salt, accurately weighed, in 50 cc. of water, in a 100 cc. glass-stoppered flask. Add 5 cc. of hydrochloric acid and about 3 gm. of potassium iodide. After solution is complete, let the mixture stand 1 hour at room temperature in the stoppered flask, then titrate the liberated iodine with tenth-normal sodium thiosulphate V. S., using starch solution as indicator, each cc. corresponds to 0.005385 gm. of iron.

FOLIA FARFARAE.

Coltsfoot Leaves. (Folia Tussilaginis).

1. The dried leaves of *Tussilago Farfara*, Linné (Fam. Compositae), with not more than 5 percent of the rhizome and roots.

2. Petioles long, pubescent; blades very brittle, nearly orbicular or broadly ovate-reniform, 8-15 cm. long and nearly as broad, deeply cordate at the base, angulately lobed and dentate with red-brown teeth, palmately 5 to 9 veined; young leaves white floccose all over, but the upper surface soon dark green

and nearly smooth, the remaining densely white floccose.

3. Taste mucilaginous, faintly herbaceous, bitter; odor indistinct.

4. Ash should not exceed 20 percent.

GUTTA PERCHA.

Gutta Percha.

1. Gutta Percha is a coagulated, milky exudate of various trees, principally of the genus *Palauquium* (Fam. *Sapotaceae*).

2. A reddish, marbled mass, often containing sand, pieces of wood, bark, etc., absolutely insoluble in water. When purified it occurs as a white, hard, tough mass, usually molded into the form of sticks.

3. It should be soluble in chloroform, carbon disulphide, petroleum ether and turpentine, leaving not more than 10 percent residue.

4. It is slightly elastic at ordinary temperature, becomes pliable at 25 to 30° C., and gradually softens on heating, becoming quite plastic at 69° C.

5. If one gram of gutta percha be boiled for one hour with 20 cc. of absolute alcohol, not more than 0.5 gm. should go into solution.

6. If one gram of gutta percha be carefully ignited in a porcelain crucible, the residue should weigh not more than 0.05 grams.

7. When exposed to air and sunlight, gutta percha absorbs oxygen and becomes brittle. It should therefore be preserved under water.

HYDRASTINAE HYDROCHLORIDUM.

Hydrastine Hydrochloride.

1. The hydrochloride of the alkaloid Hydrastine [$C_{21}H_{21}O_4 \cdot NHCl = 419.65$]. The salt is very hygroscopic and should be kept in well-stoppered amber-colored bottles.

2. White to creamy white, crystalline powder, odorless, taste very bitter; easily soluble in water and alcohol, scarcely soluble in ether or chloroform. The solution of the salt is colorless and shows a neutral to faintly acid reaction to litmus paper.

3. It melts between 116°-117° C.

When ignited it leaves no residue.

4. When dissolved in 60 percent sulphuric acid and heated the liquid assumes a dark violet color.

5. Sulphuric acid containing a trace of potassium dichromate dissolves the salt with a red color, which changes to brown.

6. Nitric acid dissolves the salt, producing a yellow color.

An aqueous solution of hydrastine hydrochloride yields a yellow precipitate on the addition of potassium dichromate T. S. or potassium ferrocyanide T. S.; the precipitates are soluble in excess of the reagent.

8. In aqueous solution, mercury bichloride T. S. produces a white precipitate, soluble when heated.

9. A solution of about 0.1 gm. of the salt in 10 cc. of diluted sulphuric acid develops a blue fluorescence when a solution of potassium permanganate is added, but no fluorescence should be visible before addition of the permanganate (hydrastinine).

An aqueous solution (1 in 20) should not be reddened by the addition of chlorine water (berberine).

IRIS.

Blue Flag.

1. The dried rhizome and roots of *Iris versicolor*, Linné (Fam. *Iridaceae*).

2. Rhizome of horizontal growth, frequently branched, 5 to 10 cm. long, 1 to 2 cm. thick, the older portion cylindrical, the younger somewhat vertically flattened and terminating in a circular scar; annulate caused by the leaf-sheaths, grayish-brown to dark-brown; internally purplish; roots long and simple, more numerous at the broader end; odor slight; taste acid and nauseous.

MAGNESII CHLORIDUM.

Magnesium Chloride.

1. It should contain not less than 95 percent of pure magnesium chloride [$Mg_2Cl_2 + 6H_2O = 203.33$]. It should be kept in airtight containers.

2. Colorless, transparent crystals, or white translucent pieces; deliquescent in moist air.

3. Soluble in about 0.6 part of water and also readily soluble in alcohol.

4. An aqueous solution of the salt, acidulated with nitric acid, yields a white precipitate on the addition of silver nitrate T. S.

5. A mixture of 10 cc. of the aqueous solution (1-20) with 10 cc. of ammonium chloride T. S. rendered slightly alkaline with ammonia water, yields a white precipitate on the addition of sodium phosphate T. S.

6. One gm. should dissolve in 10 cc. of alcohol 85% (by vol.), yielding a clear or nearly clear solution and the insoluble residue should not exceed 1 percent (limit of substances insoluble in alcohol.)

7. On adding 1 cc. of potassium sulphate T. S. to 10 cc. of the aqueous solution (1-20)

slightly acidulated with hydrochloric acid, no turbidity should result (absence of barium).

8. An aqueous solution (1 in 200), acidulated with hydrochloric acid, should not be reddened by potassium sulphocyanate T. S. (absence of iron).

9. An aqueous solution of the salt (1-20) should not respond to the U. S. P. VIII Time Limit Test for *heavy metals*.

10. Five cc. of the aqueous solution (1-10) should not respond to the U. S. P. VIII Modified Gutzzeit's Test for *Arsenic*.

11. A mixture of 10 cc. of aqueous solution of the salt (1-20), 10 cc. of ammonium chloride T. S. and 5 cc. of ammonia water should not be rendered turbid upon the addition of ammonium oxalate T. S. (absence of calcium).

12. Dissolve about 0.3 gm. of the salt, accurately weighed, in 50 cc. of distilled water, acidulated with a little nitric acid, add an excess of decinormal silver nitrate V. S. and titrate the excess of silver nitrate with decinormal potassium sulphocyanate V. S., using ferric ammonium sulphate as indicator. Each cc. of decinormal silver nitrate V. S. corresponds to 0.01017 gm. of magnesium chloride ($\text{MgCl}_2 + 6\text{H}_2\text{O}$).

MANGANI GLYCEROPHOSPHAS.

Manganous Glycerophosphate.

1. A mixture consisting of 70 to 75 percent of Manganous Glycerophosphate [$\text{MnC}_2\text{H}_3\text{O}_6\text{P}=224.98$] and 25 to 30 percent of citric acid.

2. Yellowish or pinkish-white powder, odorless, and having an acid taste. Soluble in about 4 parts of water at 25°; alcohol dissolves the citric acid, leaving a residue which is nearly insoluble in water, aqueous solutions are strongly acid to litmus and become turbid on heating.

3. An aqueous solution of the salt, on addition of an excess of ammonium sulphide T. S. gives, on standing, a salmon-colored precipitate, soluble in acetic acid.

4. On heating a powdered mixture of about 0.1 gm. of the salt and about 0.5 gm. of potassium bisulphate, pungent vapors of acrolein will be evolved.

5. No yellow turbidity should be immediately produced on mixing 5 cc. of an aqueous solution of the salt (1 in 20) with 10 cc. of ammonium molybdate T. S., but on prolonged standing or on heating a yellow precipitate will be formed (limit of phosphate).

6. The aqueous solution (1 in 20) should not be rendered more than slightly turbid by barium chloride or silver nitrate, after acidulation with nitric acid, nor should it respond to the Time Limit Test for heavy metals (U. S. P. VIII), after acidulation with hydrochloric acid, addition of ammonia water to be omitted.

7. Ten cc. of an aqueous solution (1 in 200), boiled after addition of a few drops of hydrochloric acid and chlorine water, should not be colored reddish by potassium sulphocyanate T. S.

8. Dissolve 0.4 gm. to 0.5 gm. of the salt accurately weighed in 100 cc. distilled water, add 10 cc. of ammonia water and 5 cc. of ammonium sulphide T. S. and boil the mixture until the precipitate formed has become a dirty green. Allow this to settle, then transfer to a filter and wash with hot water containing a few drops of ammonium sulphide T. S. Dry the filter and incinerate, first at a low temperature and then at strong red heat, in an open crucible until the weight is constant. The residue of manganomanganic oxide (Mn_2O_3) so obtained should correspond to 23.7 to 25.4 percent of the weight of the salt taken.

MANGANI ET SODII CITRATIS

Manganese and Sodium Citrates

1. It should contain, when rendered anhydrous at 120° C., from 49 to 51 percent of Manganous Citrate [$\text{Mn}_2(\text{C}_6\text{H}_5\text{O}_7)_2=542.87$], and from 48 to 51 percent of Sodium Citrate [$\text{Na}_3(\text{C}_6\text{H}_5\text{O}_7)=238.04$] as determined by the methods given below, and not more than 1 percent of impurities.

2. In yellowish or pinkish white powder or transparent scales, odorless, having a slight bitter and astringent taste. Permanent in the air.

3. Slowly soluble in about 4 parts of cold water; slightly more soluble in boiling water; nearly insoluble in alcohol or ether.

4. An aqueous solution of the salt (1-20) is neutral or slightly alkaline to litmus paper, but is not reddened by phenolphthalein T. S. The aqueous solution (1-10) after addition of slight excess of ammonia water yields with ammonium sulphide T. S. on warming a salmon-colored precipitate.

5. When strongly heated, the salt chars and finally leaves a green residue, consisting of sodium manganate, manganese oxides and

sodium carbonate, which imparts an intense yellow color to a non-luminous flame.

6. If 10 cc. of a 5 percent solution of the salt be slightly acidulated with acetic acid and mixed with 2 cc. of calcium chloride T. S. it should remain clear while cold, but yield a white, crystalline precipitate when heated to boiling.

7. Ten cc. of the aqueous solution (1-20) should not respond to the time limit test of the U. S. P. VIII for heavy metals, addition of ammonia water to be omitted.

8. Portions of 10 cc. each of an aqueous solution (1 in 200) should answer the following requirements: acidulated with hydrochloric acid it should not be more than slightly reddened by potassium sulphocyanate T. S. (limit of iron); and should not be rendered turbid at once by barium chloride T. S. (limit of sulphates); and acidulated with nitric acid it should show not more than an opalescence with silver nitrate T. S. (limit of chlorides).

9. If about 0.5 gm. of the salt be mixed with 5 cc. of sulphuric acid in a porcelain dish previously rinsed with sulphuric acid, the mixture protected from dust, and heated for 15 minutes on a water-bath, no color darker than yellow should develop (tartrates and other readily carbonizable substances).

10. Weigh accurately about 1 gm. of the salt previously dried at 120° C., carbonize it at a temperature not exceeding a low red heat and extract the residue with boiling water until the washings no longer have an alkaline reaction. Titrate the mixed filtrate and washings with half normal sulphuric acid V. S.; using methyl orange as indicator. Each cc. of half normal sulphuric acid corresponds to 0.043 gm. of $\text{Na}_2\text{C}_2\text{H}_3\text{O}_7$.

11. Dry the filter, and contents, from the preceding test and heat it strongly in an open crucible until the weight remains constant. The weight of mangano-manganic oxide (Mn_2O_3) obtained after subtraction of the weight of the filter ash, should be from 20.65 to 21.1 percent of the weight of the salt taken, corresponding to 49 to 51 percent of manganous citrate.

MENISPERMUM.

Yellow Parilla. (Canadian Moonseed.)

1. The dried rhizome and roots of *Menispermum Canadense*, Linné (*Fam. Menispermaceae*).

2. Occurring in pieces from a decimeter to

one or more meters in length and about 5 mm. in thickness, externally brown to yellowish-brown, internally yellowish, the surface finely wrinkled longitudinally, the nodes conspicuous; fracture tough and fibrous; bark rather thick; xylem broad, porous and usually longer on the lower side, the pith distinct; nearly odorless but with a bitter taste; roots very thin, brittle, much branched.

MYRICA.

Myrica Bark. (Bayberry Bark.)

1. The dried bark of the root of *Myrica cerifera*, Linné (*Fam. Myricaceae*), with not more than 5 percent of adhering wood.

2. In quills or quilled pieces or strips, of variable length and up to 20 mm. in breadth, the bark rarely exceeding 2 mm. in thickness; outer surface varying from dark-brown to gray-brown, occasionally slightly silvery, somewhat lustrous, at least in patches, bearing occasional warts or slight transverse ridges, the periderm frequently much wrinkled; inner surface deep rusty-brown, finely short-striated and roughish; fracture short and weak, light brown in the outer, yellowish brown in the inner layer; odor characteristic and rather disagreeable; taste astringent, mildly bitter and slightly acid.

PLUMBI CARBONAS.

Lead Carbonate. (White Lead.)

1. A mixture of lead carbonate and hydroxide approximately $(\text{PbCO}_3)_2\text{Pb}(\text{OH})_2 = 775.31$.

2. A heavy, white, opaque powder, or a pulverulent mass, without odor or taste. Permanent in the air.

3. Insoluble in water or alcohol, but soluble in acetic or diluted nitric acid, with effervescence.

3. When strongly heated, it turns yellow without charring, and, if heated in contact with charcoal, it is reduced to metallic lead.

4. If 2 gm. of the salt be dissolved in a mixture of 2 cc. of nitric acid and 10 cc. of water, it should not leave more than 0.02 gm. of residue.

5. This solution yields a black precipitate with hydrogen sulphide T. S., a yellow one with potassium iodide T. S., and a white one with diluted sulphuric acid.

6. On completely precipitating 10 cc. of the solution with hydrogen sulphide T. S., the filtrate should not leave more than 0.02 gm. residue on evaporating.

7. If 1 gm. of the salt be strongly ignited, in a porcelain crucible, it should leave a residue of lead oxide weighing not less than 0.85 gm.

PLUMBI OXIDUM RUBRUM.

Red Lead.

$Pb_3O_4=685.3$.

1. Lead orthoplumbate, Pb_3PbO_4 , containing usually some unconverted lead monoxide, PbO , and capable of yielding not less than 31 percent of lead dioxide, PbO_2 .

2. A heavy orange-red powder, without odor or taste. On exposure to the air it slowly absorbs moisture and carbon dioxide.

3. Almost insoluble in water, insoluble in alcohol, but soluble in excess of glacial acetic acid; also soluble in lactic acid with evolution of carbon dioxide and the odor of acetaldehyde.

4. When heated in a porcelain crucible, red lead changes through red and violet to a blackish tint, regaining its original color on cooling; but if the heating be continued, it slowly dissociates into lead monoxide and oxygen. When heated in contact with charcoal, it is reduced to metallic lead.

5. If 5 gm. of red lead be treated with 50 cc. of 10% nitric acid, it should react with but little effervescence (limit of carbonate), and without the development of the odor of nitrous acid (absence of lead), leaving a brown insoluble residue of lead dioxide, PbO_2 , which, upon the addition of solution of hydrogen dioxide, should dissolve with evolution of oxygen to a colorless solution, leaving, after boiling 15 to 20 minutes and cooling, a residue weighing not more than 0.2 gm. (limit of silicates, lead sulphate, etc.).

6. The solution obtained in the last test yields, with hydrogen sulphide T. S. a black precipitate, with potassium iodide T. S. a yellow one, and with diluted sulphuric acid a white precipitate, the latter two being soluble in a strong solution of sodium hydroxide.

7. If from the solution in diluted nitric acid, obtained by the aid of hydrogen dioxide, the lead be precipitated with sulphuric acid, the filtrate, after the addition of an excess of ammonia water, be diluted to 200 cc., a portion should not assume more than a slight bluish tint (limit of copper), nor yield more than traces of a reddish brown precipitate (limit of iron).

8. If a mixture of 1 gm. of red lead with

50 cc. of water be heated to boiling, and, after cooling, filtered, the filtrate should be colorless, and should not show more than a faintly alkaline reaction with red litmus paper, and when evaporated to dryness, should not leave more than 0.01 gm. of residue (limit of soluble impurities).

9. If 1 gm. of red lead be added to a cool solution of 40 gm. of crystallized sodium acetate and 2 gm. of potassium iodide in 50 cc. of 50% acetic acid, and the mixture well stirred until all red lead has dissolved, the solution, on titration, should require not less than 25.93 cc. of tenth-normal sodium thiosulphate V. S. (equivalent of 31 percent lead dioxide).

ENTERPRISE PAYS.

When your employer finds that you have a lot of enterprise, that you are trying to learn as much about his business as he knows himself, he will begin to think that you are made of promotion material. But if he sees that your ambition is just to get your salary and have as easy a time as you can, you will never attract his attention, except for a possible blacklist. An employer wants no deadwood around him. He wants live wires. He wants employees who have ambition enough to be willing to pay the price for promotion.

The first thing the successful employee must realize is that he is really working for himself. Every bit of work he does heartily, honestly, thoroughly, is developing his own capacity, making him a bigger, broader, more capable man. If he robs his employer of time or energy, he is robbing himself more, because he is practicing dishonesty, and cultivating a weakness that will slowly undermine his character and destroy his reputation for trustworthiness.

The men who have done great things in the world have been prodigious workers, particularly during the time when they were struggling to establish themselves in life.

Young men who are sticklers for hours, who are afraid of working overtime, who want to leave the office on the minute or a little before, who are always a little late in the morning, or who take their employer's time for their own personal uses—such employees never get very far—*Orison Swett Marden*.

Report on the Progress of Pharmacy

For the Year 1912

(Ninth Installment.)

"Siloxide": A New Kind of Glass.—*"Siloxide"* is a name which has been given to glass obtained by fusing pure anhydrous silica with oxides of elements of the silicon-carbon group, as titanium dioxide or zirconium oxide. The new glass, which is now being manufactured at Frankfurt, a/M, Germany, is said to be formed by the solution of these refractory oxides of an acid character in silicic acid, and it is said to be more easily worked than pure quartz glass—in fact, it can be worked by the ordinary methods employed in glass manufacture. The two kinds are distinguished as *"Z-siloxide,"* or Zirconium glass, and *"T-siloxide,"* or titanium glass. While these are said to lack the silky lustre of quartz glass, it is stated by Thomas that they possess distinct advantages over the latter in respect to strength, resistance to devitrification, and resistance to the action of alkalis. The best Z-siloxide with respect to strength is said to contain 1% of zirconia, while that containing 0.5% has the most satisfactory thermal properties. It is said that zirconium glass has a softening point not much different from that of quartz glass, but that it resists deformation better at high temperatures because of its greater viscosity. The T-siloxide is said to be even superior to Z-siloxide with respect to thermal properties—to be more satisfactory when temperatures up to 1500° C. are to be used—while otherwise its properties are the same as those of Z-siloxide.—Chem. News, July 26, 1912, 46.

"Siloxyl" Glass: Advantages and Superiority Over Quartz Glass for Chemical Apparatus.—A recent U. S. Consular Report from Zürich, Switzerland, gives some interesting particulars respecting the discovery and utility of *"Siloxyl" Glass*. The raw material from which the glass is produced is washed quartz-sand, containing 95% of silicic acid, which is melted in an electric furnace in which the temperature rises to 2000° F. All the agencies known to the glass-working industry, in-

cluding air, steam, gases, etc., can be applied, and it is now possible to melt and mould into almost any desired form as much as fifty pounds of quartz. A remarkable quality of the quartz produced by the thermoelectric process is its resistance to acids. Even boiling acid, with the possible exception of hydrofluoric or phosphoric, will not corrode it. Moreover, it has the advantage of a coefficient of expansion about one-seventeenth that of the best glass suitable for chemical utensils and apparatus. The chief objection to pure quartz glass as a material for apparatus used in the chemical industry is that it becomes brittle at high temperatures, passing from the amorphous to the crystalline state with a diminution of strength. By the new process discovered by Dr. Wolf-Burkhard, which consists in combining with the raw quartz certain metallic oxides difficult to fuse, the resulting mixture gives on fusion a transparent glassy mass which fuses at a temperature of 1750°. The advantages claimed for this material over ordinary quartz glass are that its strength is 30 to 50 percent greater than *"quartz gut,"* tested by bending, and 10 to 30 percent more tested by pressure, and that it is less brittle, the devitrification being only about half that of quartz glass. The superior advantages claimed for *"siloxyl" glass* give to this new material a wide range of usefulness, and especially for apparatus used in the acid industry, most of which have heretofore been made from platinum.—Chem. News, Aug. 23, 1912, 91; from Chem. Eng., XV, No. 5.

"Siloxide" Glass: External Properties, Color, Finish, etc.—In a paper describing experiments undertaken with a view to determining how the most important properties of the *"siloxide"* glasses can be compared with those of quartz glass, Dr. Felix Thomas describes the external properties, color, finish, etc., of zirconium and titanium *"Siloxide."*

Zircon Oxide-Silicic Acid (Z-Siloxide);

Zircon Glass). The superficial appearance of zircon glass tubes is not as alluring as that of the English "vitreosil" (Quartz Glass) tubes, with their silky surface, but this is the only point in which zircon glass falls short of "vitreosil." They have a dull finish and, if rich in zircon, a pale yellow color, and appear to be denser and firmer than the ordinary quartz glass product.

Titanium Oxide-Silicic Acid (T-Siloxide; Titan Glass). The products have a bluish color, varying from light blue to dark according to the quantity of titanium added. In the case of a small percentage of titanium the glass, if in thinish flakes, compares quite favorably with quartz glass in point of transparency; in case of a greater percentage of titanium the glass is of course far less transparent, a circumstance which, however, is of no consequence for most purposes.—Chem. News, Sept. 6 and 27, 1913, 119 and 156; from Chem. Ztg., 1912, No. 4.

Thallium: Marked Depilatory Property.—R. Sabouraud calls attention to some singular properties of Thallium which, in a certain case, five days after a dose of 0.02 gm. of the acetate, produced total baldness, and growth of hair was retarded for about six months. This property of thallium was first made use of by the author to destroy the hair *en masse* in the treatment of ringworm, using an ointment containing thallium, but the general toxic effects which developed showed that the medicament was a dangerous one. On the other hand, the author was able to dispel successfully the troublesome down which gave annoyance to young women. In such cases, the surface to be treated was always small, so that there was little fear of accident. The formula he recommends is as follows:

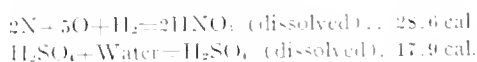
Thallium Acetate.....	0.30 gm.
Zinc Oxide.....	2.50 gm.
Soft Paraffin.....	20.00 gm.
Lanolin.....	5.00 gm.
Rose Water.....	5.00 gm.

A small piece of this ointment, no larger than the bulk of one or two grains of wheat, is applied to the lip every night. This suffices to bring about the destruction of the hair or down. In those cases where the hair is brown, and about one centimeter long, its disappearance is rapid. It is naturally replaced, however, by fresh growth, but the regular use of the ointment ensures its remaining short and almost invisible.—Pharm.

Journ. and Pharmacist, June 22, 1912, 807; from La Chirurgie, Feb. 16, 1912.

Iodic Acid: Preparation for Carbon Monoxide Determinations.—M. Niel recommends the following modification of Stas's process for the preparation of iodic acid, suitable for the determination of carbon monoxide, the latter depending upon its oxidation with iodic acid, an equivalent amount of iodine being set free: 15 gm. of powdered resublimed iodine are added gradually to 70 cc. of fuming nitric acid (sp. gr. 1.515 to 1.52) contained in a 150 cc. flask, and heated on the water-bath to 70°-75°; the temperature is raised gradually to 80°-85°, and the heating continued thirty to forty-five minutes. The color disappears and a heavy white precipitate of iodic acid is formed, which is purified by repeated crystallization from water, the yield by this modification being 84.2%. The inferior yield (18%) by the original method of Stas is due to the use of weaker nitric acid.—Compt. rend., 151 (1912), 1166.

Nitrocellulose (Fulmicotton): New Method of Preparation.—A. Dufay describes a new method of preparing nitrocellulose which depends on the use of a mixture of nitric anhydride and monohydrated nitric acid, or a mixture of 16.5N₂O₅ and sufficient HNO₃ to immerse the mass of cotton in it. The object of this method of preparation is to avoid the use of monohydrated sulphuric acid in the manufacture of nitrocellulose, and to replace it by a known quantity of nitric anhydride, corresponding to the formula of the "fulmicotton" which is to be obtained. The reason for this substitution is explained by the following equations:



Since the reaction takes place in a nitric medium there is no fear of secondary reactions; and as the weight of cotton in the dry state and the exact degree of acidity of the bath are known the reaction can be followed. The dry cotton is weighed before and after nitration; the acid bath is titrated before and after the immersion, the second titration being referred to the final volume or weight; and the final washing is performed in a known quantity of distilled water, so that the total amount of acid can be determined. The nitric anhydride is prepared by the method of Weber, perfected by Berthelot, by

distilling a mixture of fuming nitric acid and phosphoric anhydride, the author finding that the process can be carried out on a commercial scale in a retort of enamelled iron which he describes, and the freezing machine required, as well as a sufficiently large apparatus to make the phosphoric anhydride, may be made of the same material. It is an advantage also that in this process the same acid bath may be used by replenishing it after each soaking with sufficient N_2O_5 , calculated from that consumed, and of HNO_3 to completely cover the cotton.—Chem. News, Nov. 1, 1912, 211.

Soluble Starch: A New Form Obtained by the Action of Acetone.—A. Fernbach has studied the effects of various dehydrating agents on starch as a means of converting it into soluble form, and finds that this can be done by means of pure acetone. A one or two percent suspension of commercial potato starch is poured into a large excess of pure acetone and shaken vigorously; a flocculent precipitate is thus obtained, which, when collected on a Buchner funnel, transferred to a mortar, triturated with acetone, and dried *in vacuo*, is a perfectly white mass, pulverulent and very light, and soluble not only in hot water but in cold water; 1 gm. dissolved easily in 100 cc. of cold water leaving only an infinitesimally small insoluble residue. This soluble starch has almost no reducing power. It is easily saccharified by malt extract. Its solution filters readily through paper, and is colored an intense blue by iodine. If in making the soluble starch more than 2 percent of the original starch is used, a product is obtained which is only partially soluble in the cold, but the insoluble portion can be separated by filtration through paper.—Compt. rend., Sept. 30, 1912, 617.

Saccharose: Determination in Foods.—S. Rothenfusser has devised a method for the determination of saccharose in natural and artificial food products which depends upon the preliminary treatment of their suitably prepared solution with strong alkaline solutions and, simultaneously, with weak solution of hydrogen peroxide and heat. By this treatment the associated sugars and other reducing organic substances are completely destroyed, whereas saccharose remains unchanged, and may be determined quantitatively with diphenylglacial acetic acid, and finally polarimetrically. The author gives explicit directions for its estimation in fer-

mentative products, in milk, honey, flours, etc.—Ztschr. f. Unters. d. Nahr. u. Genussm., 24 (1912), No. 9.

Ether and Chloroform: Development of Heat on Mixing.—During the estimation of total alkaloids in ipecacuanha by the French Pharmacopeia method, Mme. Marcelot and H. Marcelet observed the development of heat, quite perceptible to the hands, on mixing ether and chloroform. Following up this observation for the purpose of discovering the effects on mixing the two liquids in varying proportions, using the pure liquids—the chloroform carefully freed from alcohol—kept at the same temperature, the authors found that in a mixture of 5 cc. of ether and 45 cc. of chloroform the temperature rose from the initial figure of 16.55° to a maximum of 21.5° ; a mixture of 10 cc. and 40 cc. respectively rose from 16.6° to a maximum of 25.5° ; 15 cc. and 35 cc., from 16.6° to 27.6° ; 20 cc. and 30 cc., from 16.6° to 29.65° ; and 25 cc. of ether and 25 cc. of chloroform, from 16.6° to 30.3° . With higher proportions of ether the rise diminished from 29.4° almost by the same gradation until 21.6° was reached with 45 cc. of ether and 5 cc. of chloroform. That is to say, the elevation and decrease corresponded exactly.—Bull. Sci. Pharmacol., Nov., 1912, 676.

Siam Benzoin: Source and Method of Collection.—The source of Siam benzoin is shown by Dr. Kerr in the Kew Bulletin (No. 9, 1912), to be a new species.

Styrax benzoides, Craib.—Dr. Kerr points out that the styrax tree which grows on Doi Sootep is not *Styrax Benzoin*, but a new species closely allied to *S. suberifolius*, and since described as *S. benzoides*. This tree grows rapidly, and attains a height of 12.15 M. and a girth of 9 Dm., but most of the trees are smaller, though in other parts larger trees are reported. The matter has been confirmed by the receipt at Kew of a small sample of the gum collected from the Doi Sootep trees, which in smell, taste, and fumes is identical with commercial Siamese gum benzoin. It is a homogeneous, transparent, pale-amber piece, with the characteristic odor of the balsam. The principal method of collecting it consists in making V-shaped incisions through the bark; the gum runs slowly into bamboo joints placed at the bottom of the incision, requiring several weeks for completion. The collection is usually done during

the hot season.—Pharm Journ. and Trans., Dec. 21, 1912, 777.

Digitalis: Simple Chemical Assay Method.

—In an elaborate research undertaken with the object of a comparison between physiological and chemical results with an approximate simple chemical assay method of digitalis, W. Harrison Martindale briefly reviews the knowledge of the digitalis glucosides and the various methods that have from time to time been suggested and employed for the valuation of the leaves and the various preparations made from them. It occurred to him that there would be considerable utility and value in a simple chemical mode of assay, if such could be devised—a process, in fact, which would, if possible, render the pharmacist in future independent of the physiologist. It is well known that great diversity of strength exists in digitalis leaves collected at different seasons in the same locality; also that the soil, the prevailing climatic conditions, etc., may cause marked variations. Hence the author resolved upon a systematic study, covering: (1) Examination of Infusion. (2) Examination of Tinctures. (3) Physiological Assay. (4) Devising an approximate simple chemical assay and the comparison with physiological results. Preparations of leaves in the form of infusion and tincture from various parts of Great Britain, also from several European countries were examined. Glycerin extracts and a tincture of the seeds were also included. The numerous experiments involved in this comprehensive study must be consulted in the original, and it must suffice here to mention the following from the author's summary:

(1) Digitalis preparations can be assayed by a simple colorimetric chemical method (indicating the content of combined "active-water-soluble" glucosides).

(2) The process devised by the author, though not claimed to be absolutely accurate on comparison with physiological methods, will, at any rate, show whether a tincture is above or below standard, and it will certainly show an excessively strong or weak preparation. The method requires only a small amount of tincture; the apparatus and reagents are perfectly simple, and such as a pharmacist would have on hand; and the process takes only about three hours to carry out.

(3) There are strong indications that digitalis toxin is not entirely insoluble in water.

(4) The routine use of animals in assays is not justifiable if a chemical method can be devised to produce equivalent results. The pharmacist should, if possible, be able to assay all the drugs he dispenses.

(5) Considering the danger in the variation of a tincture, and the fact that with digitalis the initial doses are invariably large, it is evident that standardization of its preparations is of great importance.

(6) There is much to be learned as to the ideal conditions for growth of digitalis. The most potent leaves examined were second year's leaves from plants grown in England in a sunny exposed situation.

(7) An active glycerol-alcohol extract can be produced of strength 1 : 1; in fact, exactly equal in strength to eight times that of a B. P. Tincture.—Pharm. Journ. and Pharmacist, Dec. 14 and 21, 1912, 745-748 and 778-780.

Senna: Pre-existence of Calcium Oxalate in the Leaves and Formation of Calcium Tartrate in the Infusion.—In an interesting paper including both microscopical and microchemical observations, elaborately illustrated and described, T. E. Wallis has demonstrated that while senna leaves contain calcium oxalate crystals, they do not contain any crystals that can be identified under the microscope as calcium tartrate, but that the deposit which is invariably formed from fresh hot infusions of senna leaves on standing a few days consists of calcium tartrate; moreover, calcium tartrate crystals are also formed by macerating senna leaves in cold water on standing a few days, thus making it evident that the deposit can not result from difference in solubility of calcium tartrate in hot and in cold water. His experiments show that the calcium tartrate does not exist as such in the leaves, but seems to be produced by some action in the infusion after it has been made, between bodies extracted by the water from the leaf. Those leaves which give no deposit of calcium tartrate show a deficiency of soluble tartrate, although containing an abundance of soluble calcium salts. It is further shown that neither excess nor deficiency of oxygen has any effect upon the quantity deposited or rate of deposition in those infusions which do deposit crystals of calcium tartrate. Senna pods show a deficiency in soluble tartrate and an abundance of soluble calcium salts, and yield infusions which do not deposit calcium tar-

trate. The best micro-chemical reagent to distinguish calcium tartrate from calcium oxalate is a solution of sodium hydroxide, which rapidly dissolves the tartrate, but has no immediate action upon calcium oxalate.—*Pharm. Journ. and Pharmacist*, Nov. 23, 1912, 644-647.

Opium: Effect of Age on its Morphine Content.—Debourdeaux finds that in powdered opium the amount of morphine compounds insoluble in water increases with age of the sample. There seems to be no definite connection, however, between the amount of change in different samples; it is greater in certain samples than in others, kept under similar conditions, and is doubtless due to a chemical modification of the composition of the mass. In the same manner the amount of total morphine lessens with the age of the sample, and this deterioration, again, is more marked in some cases than in others. It is probably due to the action of oxydase ferments, and is favored by the presence of air.—*Journ. de Pharm. et Chim.*, 1912, 6, 491.

Kefir-fungus: Conservation.—Dr. W. Schurmener describes a method for the conservation of the living kefir-fungus in a dormant condition, which consists simply in placing them into a concentrated sugar solution, whereby all growth or other change of the fungus may be prevented indefinitely. When required for use, the fungus so preserved is removed from the sugar syrup, washed with cold water, and immersed several days in boiled milk at 17° to 20° C., whereupon the fungi will be fully restored to their original activity. The author, furthermore, gives a description of a method for the preparation of kefir-milk in the household, pointing out the conditions that must be observed to obtain a satisfactory product.—*Pharm. Ztg.*, LVII (1912), No. 97, 277.

Milk: Cause of Turning Sour During Thunderstorms.—A. Trillat finds that minute traces of the various gases given off during putrefaction of organic matter, when they come in contact with milk under slightly reduced atmospheric pressure, greatly increase the formation of lactic acid and accelerate the process of lactic fermentation. The same milk, exposed to a reduced atmospheric pressure in pure air, does not become sour, or clot, in the same time. Also controls exposed under normal atmospheric pressure in presence of traces of putrefaction gases do not exhibit the same degree of acidity in a

given time, as the milk under reduced pressure. The author points out that in "thunder weather" the temperature is usually high, and the atmosphere charged with moisture, both conditions most favorable to the evolution of gases. It is, therefore, to the simultaneous occurrence of these conditions, rather than to the electrical disturbances which accompany them, that the "turning sour" of milk may be attributed.—*Compt rend.*, 154 (1912), 613.

Medicated Honey: Identification and Examination.—Dr. R. Frey communicates some valuable data for the identification and examination of medicated honeys, which are frequently purchased from the wholesale dealer and for which in the absence of reliable data, the examination is usually perfunctory, consisting of the determination of the specific gravity and observation of their appearance, odor and taste. The author's experiments lead him to recommend the polariscopic examination of these honeys for the identification of the quantity and quality of the honey used for their preparation. In the case of the dark honeys, such as honey of rose, of eucalyptus, or oxymel of squill, a process of decolorization must precede the examination under the polariscope, which is carried out as follows: 10.0 of the honey are dissolved in a 100 cc. flask in 75.0 water, 10.0 solution of lead sub-acetate are added, and this is followed after some time with the addition of 3.0 anhydrous sodium sulphate with vigorous shaking. After standing half an hour, the contents of the flask are adjusted with water at 15° to 100.0, then well shaken and at once filtered. The filtrate, which is at most faintly yellow, is then examined polarimetrically, both before and after inversion, in the usual manner, the data obtained being calculated according to Win-disch's table. The identification of the particular honey under examination is effected by extracting 5.0 to 10.0 of the honey with 10.0 ether, filtering through a dry filter, evaporating the ether by dipping the beaker into warm water, and observing the odor of the residue: Pure honey leaves its characteristic aroma; rose honey and borax honey, the odor of rose oil; eucalyptus honey, that of eucalyptol, and oxymel of squill that of acetic acid ester. The addition of 1 percent resorcin-hydrochloric acid to the residues produces a red color with pure honey and oxymel of squill (not cherry-red, as with

invert sugar), and faint red colorations with the other honeys mentioned.—*Pharm. Ztg.*, LVII (1912), No. 71,719.

Extract of Indian Hemp: Uselessness of Acetylation for its Standardization.—Since the pharmacological activity of Indian Hemp is largely due to cannabinol, C. R. Marshall and J. K. Wood considered that the determination of the acetyl value of hemp preparation might give an indication of their strength. They find, however, that such is not the case, since there appears to be no definite relation between the pharmacological activity and the acetyl value. New charas, old charas, and extract of Indian Hemp, B. P., having the relative activity expressed by 20, 1, and 16, respectively, showed acetyl value of 134, 123, and 295. A sample of cannabinol distilled from old charas had the relative activity 6, and the acetyl value 190; another sample, distilled from new charas, showed 18 and 218 respectively. The authors conclude that no simple chemical method is at present available as a substitute for pharmacological experiment in the standardization of Indian Hemp preparations.—*Brit. Med. Journ.*, 1912, 1, 1234.

Fluidextract of Ergot: Advantageous Use of the "Syphon Percolator."—Dr. Kunze calls attention to the advantageous use of the "Syphon percolator" for extracting ergot according to the process of the G. P. for the fluidextract. He finds that owing to the formation of smeary masses in the percolator, percolation is impeded and often comes to a full stop when the operation is conducted in percolators of the ordinary form. By the use of the "syphon percolator," the liquid accumulates at the bottom and is drawn upward by the syphon, the flow becoming continuous when sufficient percolate has accumulated and the syphon has been set into action. The author's description of the "syphon percolator" agrees with that, usually given in American text books, of Squibb's "well-tube" percolator.—*Pharm. Ztg.*, LVII (1912), No. 98,988.

Concentrated Infusions: Comparison with Freshly Prepared Infusions.—A. Heiduschka and Joseph Schmid report the results of comparative biological and chemical experiments made with concentrated infusions of digitalis and of ipecacuanha representing the respective drugs weight by weight, which are recommended for the extemporaneous prepara-

tion of the infusions, and of infusions prepared by the official process direct from the drug. The chemical method consisted in the determination of the extract, the specific gravity, and the ash content, supplemented in the case of digitalis by the estimation of the digitoxin content of the infusion, by the method of Keller (modified), and in the case of ipecacuanha by the alkaloid determination prescribed by the G. P. V.; while the frog method of Focke was applied to the digitalis infusions for a comparison of their physiological activity. The results, which are exhibited in form of a table, prove conclusively that infusions made from these so-called concentrated infusions are pronouncedly inferior to infusions made directly from the drug, and lead to the conclusion that both infusions and decoctions should invariably be made freshly in accordance with the official requirement.—*Zentralbl. f. Pharm.*, 1912, No. 41.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

ORAL CONTRACT FOR SALE OF SODA FOUNTAIN—STATUTE OF FRAUDS. An oral contract was made for the sale of a soda fountain, of which the parts were to be assembled by the seller. The purchaser refused to accept the fountain, and in an action for the contract price it was urged as a defense that there could be no recovery because there was no sufficient written agreement between the parties, as required by the statute of frauds, providing that every contract for a sale of "goods, chattels or things in action" for the price of \$50 or more shall be void unless a note or memorandum thereof be made in writing and subscribed by the parties to be charged therewith.

The fountain which the plaintiff agreed to deliver was of particular dimensions and finished after a special design furnished by a third party. It was not an article manufactured by the plaintiff in the ordinary and usual course of business. The woodwork was to be furnished by one party, the marble work by another, and the working parts by a

third; all of which the plaintiff contracted to assemble and deliver to the defendant, in the form of a complete new soda fountain after a special design, adapted for the use to which, and in the place where, the defendant had planned to put it. It was held that the contract was for the manufacture and sale of a thing made to suit the fancy and serve the particular convenience and purpose of the defendant, without a market value for use in general trade, and therefore, although the agreement might result in the production and sale of a chattel, it was one for work and labor, and not within the statute of frauds.

The fountain having been manufactured to the defendant's order after a special design, it was held, following the rule in the majority of the states, that the seller might elect to hold the property for the purchaser and recover the contract price; the article being presumptively without a market value. Although the contract provided that title should not pass until the fountain was set up and accepted, the seller might, upon tender of delivery and refusal, sue for the contract price. The tender, coupled with ability to deliver and election to sue vested title in the purchaser for the purpose of the action.

Bond v. Bourk, Colorado Supreme Court, 129, Pac. 223.

PURE FOOD AND DRUGS LAW—INTERSTATE COMMERCE. A corporation located in the southern district of the state of New York was indicted for violation of the Pure Food and Drugs Law. It was held that an objection that it could only be prosecuted in the district where its principal place of business was located could not be raised by plea based on the wording of the information.

Section 2 of the statute prohibits the introduction into any state of any article of food or drugs adulterated and misbranded, and that any person who shall ship or deliver for shipment from any state to any other state any such adulterated article shall be guilty of a misdemeanor. It was held that since the statute relates solely to interstate commerce, no jurisdiction to prosecute for violation of the act can be acquired, except through the existence of interstate commerce. It was also held that Section 4, which provides that the Secretary of Agriculture, after an investigation of the alleged violation of the law, shall at once certify the fact to the United States district attorney, requires the certification to

the district attorney in whose district prosecution for the offense charged should be laid, Section 10, providing for the seizure of adulterated or misbranded goods within any district where they may be found, relates to civil proceedings against the goods only, and does not determine jurisdiction of a criminal prosecution. The gist of the offense is the shipping or delivery for shipment of adulterated or misbranded goods, to be introduced into another state by interstate commerce, and therefore jurisdiction exists in the federal court of the district from which the goods were shipped though the defendant did not reside in such district. The statute did not repeal the general three-year statute of limitations applicable to crimes, so as to require immediate prosecution on the theory that in case of delay, the right of prosecution would be barred by laches.

United States v. J. L. Hopkins Co., New York E. D. District Court, 199 Fed., 649.

OWNERSHIP OF BANK DEPOSITS. In summary proceedings by the trustee of a bankrupt drug company against a bank, the bank holding notes against the bankrupt for an amount larger than the bankrupt's total deposits, claimed the right to set off the notes against the deposits. The trustee claimed that the deposits had been made under a special arrangement with the creditors, to be paid to them on their debts pro rata, and that the bank had notice thereof. The deposits were entered on the bank's books to the credit of the bankrupt, without anything to show that they were other than ordinary deposits. At the time of the institution of the bankruptcy, the greater part of them consisted of the proceeds of a note given to the bankrupt for the purchase of its goods. It was held that the bank's claim was not merely a colorable one, but an adversary one, and could only be determined in a plenary suit between the bank and the trustee, and not by summary proceedings in bankruptcy.

First Nat. Bank of Thomasville, Ga., v. Hopkins, C. C. A., 199 Fed. 873.

ADULTERATION — MISBRANDING—GRENADINE SYRUP. A shipper consigned from Boston for delivery in New York 30 cases containing bottles labeled "Grenadine Syrup," as being adulterated within the meaning of the Food and Drugs Act, in that a compound sugar syrup had been substituted wholly or in part for the food named, and as being misbranded

within the meaning of the act, in that the label deceived and mislead the purchaser into the belief that the food consisted of grenadine syrup, whereas in fact it did not. The shipper denied adulteration and misbranding. The government contended that "Grenadine Syrup" means only syrup composed of sugar and the juice of the pomegranate. The shipper claimed that according to the accepted meaning of the words they signify only a sugar syrup having a certain color and flavor. He conceded that no pomegranates were used in the manufacture of the syrup. If the government was right in its contention that the words "Grenadine Syrup" have, in common acceptance, the limited meaning it asserted, it had proved adulteration and misbranding. It was, however, held that the term does not in its common acceptance, mean a syrup made from pomegranates but is used in commerce to designate, not a syrup so made, but a syrup possessing a certain characteristic flavor and color. The purchaser of a syrup so labeled would not have the right to expect a syrup actually made from pomegranates. The syrup labelled was therefore not subject to forfeiture.

United States v. Thirty Cases Purporting to be Grenadine Syrup, Massachusetts D. District Court, 199 Fed. 932.

MANUFACTURE OF SMOKING OPIUM. The Circuit Court of Appeals holds that any process whereby crude opium is converted into a product fit for smoking constitutes a "manufacture" of smoking opium within the meaning of the Internal Revenue Act of Oct. 3, 1890, imposing a tax upon all opium manufactured for smoking purposes in the United States, and prescribing regulations for such manufacture to be observed under penalty of criminal prosecution. That act was not repealed nor its application narrowed by the Act of Feb. 9, 1909, prohibiting the importation of opium for other than medicinal purposes.

Marks v. U. S., 196 Fed. 476.

VALIDITY OF ADRENALIN PATENTS. The Takamine patent, No. 730,176, for the glandular extractive product commercially known as "Adrenalin," claim 1, covers "a substance possessing the therein described physiological characteristics and reactions of the suprarenal glands in a stable and concentrated form and practically free from inert and associated gland tissue." Claims 2, 9, 11, 12 and 14, all contain a reference to "associated gland tis-

sue." The Circuit Court of Appeals holds that these claims construed in the light of the specification, must be limited to a substance possessing the described characteristics and reactions the constituents of which, or some of them, were at one time associated with suprarenal gland tissues. As so construed all of these claims were held to be valid. Claims 6, 13 and 15 of the patent, which do not contain such limitations, were not passed upon. The Takamine patent No. 753,177, for a glandular extractive compound dealing with a salt of the product covered by patent No. 730,176, claims 5 and 6, which are expressly limited to a compound of an acid and "the herein described product of the suprarenal glands" were held valid. Claims 1 and 2, which were without such limitation, were not passed upon.

Parke, Davis & Co. v. H. K. Mulford & Co., 196 Fed. 496.

ILLEGAL SALE OF POISON—INDICTMENT. An indictment under the Minnesota statute, R. L. 1905, Section 2340, purported to charge the defendant with the crime of permitting the vending of poison in his place of business without the supervision of a registered pharmacist or assistant, resulting in the death of a human being. It alleged the name of the person to whom the sale was made, but not the name of the person making it; that the defendant knowingly permitted the sale, but not the manner or mode in which the defendant permitted the sale; and that the sale was made without the supervision of a registered pharmacist. It was held that the indictment stated facts sufficient to constitute a public offense.

State v. Mayo, Minnesota Supreme Court, 136 S. W. 849.

SODA FOUNTAIN TANK EXPLOSION—LIABILITY. In an action for the death of an employe caused by the explosion of a soda fountain tank, it was found that the proximate cause of the occurrence was the negligence of a co-employe who had been directed by the employer to instruct the deceased how to charge the tank. It was held that the negligence was not that of the fellow servant, but of the employer, and hence the employer was liable. Such co-employe having charge of the employer's soda department, and it being one of his duties to see that the fountains were charged, he represented the employer in giving such direction. The tank which exploded was badly rusted and scaled and in

nse in a place and under circumstances highly conducive to rust and deterioration. It was held that the employer's negligence in failing to use reasonable care to maintain the tank in a safe condition was for the jury. An instruction to the jury that the employer was bound, in making an inspection of the tank to do what a reasonable man of ordinary prudence would do to keep the tank in a reasonably safe condition was not error. While the reference to inspection might properly have been omitted, it could not be said that it misled the jury, although there was no evidence showing that inspection of such apparatus was usual or customary.

Reference by the plaintiff's counsel, in his argument, to the death as a murder worthy of the pirates of old, remarks that the employe was sent into a sewer reeking with slime and smells, without the opportunity to prepare for eternity given to the worst criminal, and that the jurors would not want it on their conscience that they had placed a man in such danger, were held to be inflammatory and improper, and contributed to a reduction of the verdict from \$6,286.01 to \$3000.

McDonnell & Central Drug Co., Michigan Supreme Court, 136 N. W. 383.

UNLAWFUL SALE OF COCAINE—EVIDENCE. In a prosecution for unlawfully selling cocaine, a doctor, who was also a pharmacist, testified that he could not tell the difference between cocaine and epsom salts, except by an actual test. It was, nevertheless, held that his opinion that a powder in a package which he tasted was cocaine was properly admitted, he having previously described the effect of cocaine and the effect of the powder which he tested and as he did not say that his opinion was unsatisfactory.

A person to whom the sale was alleged to have been made was a witness for the defendant. It was held that the evidence of an officer that he saw the defendant give the witness a package for which she paid him and received change, and that as soon as she came out of the house he arrested her, and found on her person the package, which contained cocaine and the change tied up with it in a handkerchief, and that she admitted purchasing it from the defendant was held admissible to contradict her.

State v. Bruno, North Carolina Supreme Court, 74 S. E. 462.

INTOXICATING LIQUORS—SALES BY DRUGGISTS—ASSIGNMENT OF LICENSES. In a prosecution for selling liquor without a license the West Virginia Supreme Court holds that an endorsement of a transfer on a druggist's license previously granted by a court, by the clerk thereof, without previous authority of such court lawfully given, is void. The subsequent grant and confirmation of such transfer by such court, though regularly and lawfully done on proper application, will have no retroactive effect to protect the assignee of such license against the consequences of his prior unlawful act in making sale of spirituous liquors.

Neither a druggist, nor registered pharmacist, not a licensed druggist, can under the laws of West Virginia, lawfully sell spirituous liquors, even upon the prescription of a physician without a state license therefor, as required by Section 1 of Chapter 32, Code 1906.

When by statute, as in West Virginia, an act is made an offense under the liquor laws without regard to the intent with which it is done, evidence on the subject of intent is not material; and on the trial of one charged with a violation of such statute, there is no error in rejecting such evidence, or instructions to the jury thereon.

State v. Ross, 74 S. E. 670.

DRUGGISTS' LIABILITY FOR CLERK'S NEGLIGENCE. Action was brought against a druggist for the negligence of a clerk employed by him in putting up a prescription. The prescription read "Rhei., Calumba, Bismuth Sub., Sodii Bicarb., Zingiber, Fiat in Chart. XXIV, One t. i. d." The clerk read the prescription as intended, except that he interpreted the second word to mean "Calomel" instead of "Calumba"; and he accordingly put up the powders, each containing five grains of calomel. A prescription of such a quantity to be taken three times a day, making a total of 120 grains, or 2 drams in eight days, would be unusual, though not unprecedented in some violent diseases. The quantity of calomel compounded by the clerk attracted his attention, and he inquired of the plaintiff through her interpreter (she being an Italian who did not understand English) if she understood the dose, and had any special instructions from the doctor. The record did not show that any response was given to this inquiry. After taking six of the powders the plaintiff became ill. The defendant denied

the negligence and also based his defense upon the allegation that his clerk was a licensed pharmacist. It was held that a druggist's liability for his clerk's negligent filling of a prescription is not defeated because the clerk was a competent druggist of experience. A druggist must use ordinary care in filling a prescription; the degree of vigilance and prudence called for being commensurate with the dangers involved. "Ordinary care" with reference to the business of a druggist was held to signify the highest practicable degree of prudence, thoughtfulness and vigilance, and the most exact and reliable safeguards consisted with the reasonable conduct of the business, in order that human life may not constantly be exposed to the danger flowing from the substitution of deadly poisons for harmless medicine.

The jury's finding that the clerk was negligent in compounding the powders was held not to be inconsistent with their findings that calomel was furnished in the prescription by mistake, that the prescription as he read it aroused the clerk's suspicion that calomel was not intended, and that the clerk made no reasonable effort to ascertain whether he was mistaken.

Tombari v. Connors, Connecticut Supreme Court, 82 Atl. 640.

SALES—RETURN OF GOODS. Where a druggist ordered certain drugs, to be paid for in 30, 60, 90, 120 and 150 days, and the vendor agreed that in consideration of the fulfillment of the terms of the order and other agreements the vendee could return any goods remaining unsold at the end of the year, the vendee had a right to return the drugs remaining unsold at the end of the year, although he had not paid the entire purchase price according to the terms of the order.

Ramsey v. Hessig-Ellis Drug Co., Oklahoma Supreme Court, 122 Pac. 662.

QUALIFICATIONS FOR REGISTRATION—PENNSYLVANIA ACT OF 1905. The word "retailing" used in the Pennsylvania Act of 1905 does not necessarily confine the experience of an applicant for registration as a registered pharmacist to a retail drug store. Where an applicant has had four years' practical experience in the business of retailing, compounding or dispensing of drugs, chemicals and poisons, and of compounding physicians' prescriptions, although part of said time was at a United States army post hospital, and is

a graduate of a reputable and properly chartered college of pharmacy, such applicant comes within the qualifications prescribed by the Act of 1905.

Raines' Case, 38 Pennsylvania 100, 21 Atl. 211.

PURE FOOD AND DRUGS ACT—NOTICE AND HEARING. The United States Supreme Court holds that the notice and preliminary hearing by the Department of Agriculture, which must be given under the Pure Food and Drug Act of June 30, 1906, to the person from whom the sample was obtained, when, upon examination by the Board of Chemistry, an article found to be adulterated or misbranded, is not a condition precedent to the prosecution of a manufacturer, instituted by the Department of Agriculture or its agent, for shipping misbranded goods in interstate commerce.

U. S. v. Morgan, 32 U. S. Sup. Ct. 81.

VIOLATION OF RULE UNDER PURE FOOD ACT.

The Nebraska pure food statute provides that testing of cream for commercial purposes "shall be done in accordance with the rules and regulations therefor prescribed by the commission" Ann. St. 1911, 9838. The Commissioner made a rule that payment for cream purchased for commercial purposes should not be made on the same day of the purchase. It was held that a defendant could not be punished criminally for a violation of this rule, the time and manner of payment having no connection with the testing of the cream.

State v. Elam, Nebraska Supreme Court, 136 N. W. 59.

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ABSTRACT OF U. S. TREASURY DECISIONS.

(T. D. 33069.) **FORFEITURE AND DESTRUCTION OF SMOKING OPIUM.** The opinion of the Attorney-General is that smoking opium seized for violation of Section 1 of the Act of February 9, 1909, prohibiting its importation, may, under Section 2 of the act, be summarily forfeited and destroyed by collectors of customs without judicial proceedings. The offense is committed whenever smoking opium is fraudulently and knowingly brought by an offender within the territorial limits of the United States. The offense is then complete, although the opium may not have been

landed from a ship or have been carried across the customs lines.

"There is an entire distinction," the Attorney-General says, "as to the propriety of summary destruction between articles which are nuisances *per se* and articles of a lawful character, but brought within the ban of the law by some collateral circumstance. Opium belongs to the former class. It is a noxious drug fitted by nature to do harm to the community. It is, in and of itself, a menace. It belongs to the class of things which 'carry their own identification as contraband of law' (220 U. S. 57), 'which are outlaws of commerce' (Ibid. 58)."

(T. D. 33117—G. A. 7420.) DRUGS—ESSENTIAL OILS. It is held by the Board of General Appraisers that oil of cypress, oil of cloves, oil of cardamom, oil of Ceylon cinnamon, and oil of pennyroyal distilled from drugs, which, through the processes of distillation, have lost their identity as such are no longer crude drugs, but are essential oils, and are subject to duty at the rate of 25 percent ad valorem under paragraph 3 of the tariff act of 1909.

(T. D. 33118—G. A. 7241.) MEDICINAL PREPARATIONS.—*Ext. Taraxaci* "Allens," *Ext. Gentianae* U. S. P., and *Syr. Rhamni*, are held by the Board of General Appraisers not to be drugs within the meaning of the language of paragraph 20 of the tariff act of 1909, but medicinal preparations, and as such are dutiable at the rate of 25 percent ad valorem under paragraph 65 of the act. It was not denied by the protestants that they were extracted from roots and berries having medicinal properties and were prescribed for and used as medicine.

(T. D. 33131.) DRAWBACK ON MEDICINAL AND TOILET PREPARATIONS. T. D. 29719 of April 30, 1909, providing for the allowance of drawback on flavoring extracts, concentrated essential oils, concentrated essences, and perfumes manufactured by Van Dyke & Co. of New York, is extended to cover medicinal and toilet preparations manufactured by that company with the use of tax-paid alcohol, and amended to permit the filing of supplemental sworn statements.

(T. D. 33167.) MENTHOL—MEDICINAL PREPARATIONS. The United States Court of Customs Appeals holds that menthol, or peppermint crystals, is not a crude drug, but a

manufacture from the peppermint plant. As imported it is sometimes used without the addition of any carrying material for medicinal purposes, while its more common use is in solution or as a salve mixed with inert matter or the like. It was held properly classified as a medicinal preparation and was dutiable accordingly under paragraph 65, tariff act of 1909. The fact that in its customary use it is to be put in form for such use by the use of a carrier, or that it is to be dissolved, so long as it requires no chemical change and no compounding with other medicinal ingredients to make it useful as a medicine, does not result in taking it out of the category of medicinal preparations.

(T. D. 1825.) ALCOHOLIC MEDICINAL PREPARATIONS. The Elixir Calisaya Bark, manufactured by the Upjohn Co., is now manufactured under a formula approved by the Internal Revenue office, and its name has therefore been removed from T. D. 1794, of August, 1912, and special tax is not required for its sale.

(T. D. 1831.) DENATURED ALCOHOL. The Commissioners of Internal Revenue have authorized the following formula for use in the manufacture of transparent soap:

Formula No. 3a: To 100 gallons of ethyl alcohol there is added 6 gallons of the following mixture: Five gallons of commercially pure methyl alcohol, having a specific gravity of not more than 0.810 at 60° F., and 1 gallon of castor oil.

THE TOWN OF "NO GOOD."

Have you heard of the Town of

"No Good," on the banks of the River
Slow,

Where the Some-time-or-other scents the air,
And the soft Go-easies grow?

It lies in the valley of What's-the-use, in the
Province of Let-her-slide;

It's the home of the reckless I-don't-care,
where

The Give-it-ups abide.

The town is as old as the human race, and it
Grows with the flight of years.

It is wrapped in the fog of the idler's dreams,
Its streets are paved with discarded
schemes,

And are sprinkled with useless tears.

—*The Australasian Journal of Pharmacy.*

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

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A CORRECTION.

In the February issue, page 167, tenth line from the bottom, the word "declined" should be "decided."



A WORTHY PRIZE WORTHILY BESTOWED.

At the last examination held at Jacksonville, Fla., January 16th and 17th, Mr. C. A. Forbrich of the Department of Pharmacy of Northwestern University, Chicago, made the highest average in all subjects, and thereby won the first prize offered by the Florida Board of Pharmacy, consisting of a nomination to membership in the American Pharmaceutical Association and a check for the payment of the first year's dues. He also made the highest rating in the subject pharmacy and thereby won the second prize, consisting of a nomination to membership in the Florida Pharmaceutical Association and the first year's dues.

With such a notable start, we may expect that Mr. Forbrich will become an active member and association worker.



VOLUME 59 OF THE PROCEED- INGS.

Those who have read the Council letters regularly printed in the JOURNAL will recall that in June last the General Secretary was ordered to defer the publication of volume 59 of the Proceedings until after the Denver meeting. (See July JOURNAL, pp. 782-784.)

At the Denver meeting, after an extended discussion it was resolved (See October JOURNAL, p. 1103), to publish the report on Progress of Pharmacy covering the period from June 30, 1910, to December 31, 1911, with the official data, etc., as Volume 59 of the Proceedings, and that future reports on the Progress of Pharmacy should be published, in monthly installments, in the JOURNAL, beginning January, 1913.

Immediately following the Denver meeting the manuscript copy for the foregoing volume was placed in the hands of the printer, and is now so well advanced toward completion that it should be ready for distribution to all dues-paid members, within a few weeks after the appearance of this issue of the JOURNAL.

Dues-paid members who do not receive the book within a reasonable length of time

should address a letter of inquiry to the Treasurer.



PROGRESS OF THE A. PH. A. HOME.

The replies to the circular letter addressed to the members concerning the A. Ph. A. Home have been numerous, and are unanimously in favor of the establishment of a permanent abiding place for the official headquarters and association property. The offers of help are abundant, and there seems to be no differences of opinion as to the desirability and feasibility of the project.

In considering the cost of maintaining such a headquarters building, there should be kept in mind the distinction between the physical maintenance of the building itself, and the cost of maintaining research workers therein.

The physical upkeep of a building sufficient for the needs of the Association, including such expenses as taxes, insurance, heat, light, and janitor service could probably be provided for out of the income from the present invested funds of the Association, or the excess would be so small as to be of but little consequence. This part of the question, therefore, need cause but little concern.

The plan of a headquarters building, however, includes the employment of research workers for laboratory research on National Formulary, U. S. P., and other pharmacy problems, and it is in providing for such activities that the greater part of the expense would be created.

For this portion of the expense the Association would have to rely upon contributions from members and from patrons who could be made to see the importance of the work proposed to be done, and who are able and willing to contribute funds for that purpose. This need cause no uneasiness, however, since until such funds were provided, or until the income from other sources is sufficient, such expense would naturally not be incurred.



NEW MEN AT THE HELM OF THE DEUTSCH-AMERIKAN- ISCHE APOTHEKER-ZEITUNG.

Following the death of its former publisher, the Deutsch-Amerikanische Apotheker-Zeitung will be published by the German

Apothecaries' Publishing Co., of which Felix Hirseman is president and Hugo Kantrowitz is secretary and general manager. It is the ambition of these two gentlemen not only to maintain the present high standing of the publication, but so to broaden its scope and influence as to make it the leading publication of its kind in America. On the editorial staff also are Dr. William C. Alpers, of New York, and Wilhelm Bodemann, of Chicago.

Felix Hirseman is one of the best known and most versatile of German-American pharmacists, and he has held many important positions in pharmacy. Among other honors bestowed upon him in past years have been the presidency of the New York State Pharmaceutical Association and also of the New Yorker Deutschen Apotheker-Verein.

The former and present general manager, Hugo Kantrowitz, has been so intimately identified with the Zeitung that one cannot help associating his genial personality with the very name of the publication. To know that he is to continue as general manager and that Felix Hirseman is with him at the helm, is to know that it will go on to even greater success and prosperity. The Report extends its heartiest congratulations and good wishes.

Hoch die Deutsch-Amerikanische Apotheker-Zeitung!—Reprint from Merck's Report, Dec., 1912.

The Bulletin Board

ANNUAL MEETING OF THE AMERICAN DRUGGISTS' FIRE INSURANCE COMPANY.

The Annual Stockholders' and Directors' Meeting of The American Druggists' Fire Insurance Company took place at Cincinnati, Ohio, on the 11th and 12th of February.

For the first time in its history the insurance written for one year was in excess of ten million dollars, the exact volume being \$10,089,330.06, at a premium of \$102,857.28. The premium as shown is after allowing for the 25 percent reduction in premium rate which is made for all policyholders. The company saved the retail drug trade of the country who are its policyholders during last year the sum of \$34,252.87. The actual

saving made by policyholders since the company has commenced business are \$120,106.32. The income for the year from all sources after deducting premiums paid for reinsurance amounted to \$105,955.55. The fire losses incurred during the year amounted to \$46,558.39. All expenses both paid and accrued as against the business of the year amounted to \$36,527.53. The Company on the 31st day of December, 1912, owned Government and Ohio County and Municipal Bonds to the amount of \$300,387.13. During the year its reinsurance reserve on added business was increased to the sum of \$6,486.28, thus bringing the entire reinsurance reserve to the sum of \$48,461.97. The total assets of the Company on December 31st, after deducting non-admitted assets, amounted to \$333,128.82. The total accrued liabilities not including the reinsurance reserve at that time amounted to \$11,270.19. The reinsurance reserve, which under the law is regarded as a liability, as stated, amounted to \$48,461.97.

The Directors at their annual meeting declared a nine percent (9%) dividend to stockholders of record, payable on the 1st day of March.

The following Officers and Directors were elected:

Directors: Charles H. Avery, L. G. Heinritz, James H. Beal, W. S. Elkin, Jr., Wm. C. Anderson, G. O. Young, A. O. Zwick, Lewis C. Hopp, Simon N. Jones, John D. Muir, Walter Rothwell, George B. Kauffman, M. S. Kahn, E. B. Heimstreet, Frank H. Freericks.

Officers: President, Charles H. Avery; Vice President, L. G. Heinritz; Secretary and General Counsel, Frank H. Freericks; Treasurer, George B. Kauffman.

Executive Committee: Charles H. Avery, L. G. Heinritz, J. H. Beal, George B. Kauffman, Walter Rothwell, A. O. Zwick and Frank H. Freericks.

On Tuesday, February 11th, the visiting and local stockholders were tendered a luncheon by Drs. Beal and Kauffman, at the Grand Hotel, and Tuesday evening, after the first day's work was completed, the Directors, Advisory Members and Non-Resident Stockholders, were entertained by the local stockholders with a theater party and after-theater dinner at the Bismarck.

CONCERNING THE PROPOSED A. PH. A. HOME.

Below are printed a few of the numerous replies to the circular letter sent out by the General Secretary a few weeks since. It is intended to print all of the responses as space permits:

CITY ISLAND, NEW YORK.

Replying to your request for an expression of opinion as to the utility and desirability of a home for the American Pharmaceutical Association, I believe that there will be a general assent, as hundreds of arguments can be brought in favor of it, and hardly any against the proposal. It seems to me to be simply a question of expediency, a question whether men who have become wealthy through pharmacy and chemistry can be found with sufficient liberality and broadness to create a fund for such a noble enterprise. As you pointed out in your editorial, and also in your circular letter, the historical collection and the preservation of the archives, proceedings, and general literature, would warrant such an expenditure. The advantage of a permanent official headquarters must be apparent to all, as well as the usefulness of an experimental laboratory for the working out of formulae for the National Formulary, for the Pharmacopeia, and for other purposes. It seems to me that the reporter on the progress of pharmacy should also have his headquarters at such a home, so that the great facilities of the clerical staff as well as the laboratory would be at his disposal.

It is not necessary to dwell on all the advantages that the Association as such would derive from this house, but there is a much broader view to take of this home, how it might be of use to every pharmacist in the United States, and to those in foreign lands as well. Pharmacy has gained in the last twenty years a higher standard in the opinion of the public than ever before, and is recognized by nearly every university by a faculty equal in scientific attainments and purposes to any other. The same spirit of elevation and enlargement of its field of usefulness prevails in other countries, and it is only by cultivating this general spirit, which seems to be international, that pharmacy will finally be freed from the commercial incubus and attain the high degree of scientific worth that it deserves. To do so the pharmacists of the

United States should recognize that they also owe a duty to the scientific world, I might say to civilization, and this duty can only be performed by the aid of such a central headquarters for all pharmaceutical matters.

To explain better the thoughts that agitate my mind, I would like to make a comparison between this pharmaceutical home and a home that exists now in New York, and has done wonderful and remarkable work during the short time since its establishment. I refer to the Deutsches Haus (German House) of Columbia University, an institution originally founded at the instigation of the Germanistic Society of America, the aim of which is to acquaint the American nation with all phases of modern German civilization. It is the great exchange place for information regarding American and German education, art, literature, and similar matters which are of interest to the educated class of both nations. The house contains a Bureau of Academic Information, where students who wish to study in Germany may receive particulars regarding the details of their stay abroad, tuition, curriculum, living expenses, etc., and lecture tours are arranged for prominent visiting Germans. There are also facilities for arranging similar matters in Germany and for arranging tours of Americans in the German Empire. In the reading room and library may be found the latest German contemporary literature, leading German magazines and newspapers, and a valuable collection of clippings concerning modern German art, music, drama and literature. The third floor of the house contains the apartments of the Kaiser-Wilhelm Exchange Professor during his stay in New York, and in addition there are two rooms which are occupied by prominent German guests who pass through New York, and wish to keep in touch with the work being done at this institution, which may be rightly called the common meeting place in this country of the German and the American people. A similar house for the French in this country, the Maison Francaise, is now being organized along the same lines as the Deutsches Haus.

In the same way a Pharmaceutical House should be organized, as the great intellectual exchange for matters pharmaceutical of the world. Here the threads of all universities and pharmaceutical schools could run together. Exchange of professors for lectures,

exchange for students if necessary, could be arranged, prominent pharmacists of Europe would be welcomed here, and tours for their American stay laid out. Such an institution should be the headquarters for all sciences pertaining to pharmacy, and in this way serve not only the members of the American Pharmaceutical Association, but pharmacy in general all over the world.

By all means let us have it! It is the one institution that would raise pharmacy to a height to which it has never yet attained!

Yours very truly,

WILLIAM C. ALPERS.

ST. PAUL, MINN.

I have your recent favor asking an expression of opinion regarding the desirability of permanent official headquarters, and beg to say that my opinion is that such headquarters are not only desirable but necessary.

Having been trained at the headquarters of the Pharmaceutical Society of Great Britain I have been able to experience personally the great benefits that are derived from such a building, where is to be found the finest reference library in the country, a fine museum of vegetable products and a herbarium of dried plants, together with many objects of historical interest, the value of which increase as time goes on, and which would be practically lost to posterity for the want of a place to keep them.

I refer to such things as old-fashioned ointment jars, pestles and mortars, prints and old pictures. Believe me when I say that you are working along the right lines in trying to establish permanent headquarters for the American Pharmaceutical Association.

Yours very truly,

F. A. UPSHER SMITH.

PHILADELPHIA, PA.

I have your letter in regard to having an official home for the Association's headquarters. I agree heartily with you that this is a very important plan. The American Pharmaceutical Association should have some place that they could call home, where they could work out problems relating to pharmacy and chemistry. Very cordially yours,

W. A. PEARSON.

NEW YORK CITY.

In reply to your letter of recent date would say that I am very pleased to learn

that my check was the first one sent for the good cause—the idea of the A. Ph. A. home is certainly a splendid one. As I stated in my previous letter will try to interest other pharmacists, and I hope the contributions will increase rapidly.

Wishing you success from the bottom of my heart, I remain, Yours fraternally,

J. LEON LASCOFI

NEW YORK.

In reply to your circular letter in relation to the desirability of providing an Association Home, or permanent official headquarters for the Association, I am of the opinion that there is urgent need for an Association Building, not only to house and preserve the already valuable property of the Association, but to provide adequate facilities for carrying on its increasingly important work.

If a suitable location for such a building can be agreed upon and secured, it should not be difficult to finance the project, although I don't think it possible to interest people outside the drug trade in it. I do think, however, that each active member of our Association can be relied upon to contribute something for a building fund, and in addition, as already suggested by a correspondent, if parts of the building could be erected as memorials of distinguished American pharmacists, and a Procter room, a Parrish room, a Squibb room, etc., be provided for, I am persuaded that with such a tangible means of honoring the memories of their preceptors before them, pharmacists who benefited by their teachings would gladly contribute according to their means for this laudable purpose. Very truly yours,

THOS. F. MAIN.

BROOKLYN, N. Y.

Count me with you in the matter of a permanent home for the A. Ph. A. We need just such, and need it very much.

Yours truly,

R. G. ECCLES

BOSTON, MASS.

In addition to the many advantages which would accrue to our Association from the erection of such a building that are enumerated in your article entitled "The Need of an Association Home," you have failed to give place to the advertising possibilities of such a structure, the increase it would bring to

our revenues merely from its possession, and also, which is perhaps pre-eminently most important, the added dignity it would give to our calling by the possession by the craft of a building devoted to the national interests of pharmacy.

Pharmacy needs to be uplifted by its disciples. What pride would every pharmacist feel in a noble dignified structure, devoted to pharmacy, the center of pharmaceutical light for the United States, if not for all the world?

To be respected we must dignify ourselves. "The fault, dear Brutus, is not in our stars, But in ourselves, that we are underlings."

Can we dignify ourselves more than by the erection of a noble structure,—A Home for American Pharmacy,—to which we could point with pride and which must bring increased respect to all the profession?

Yours very sincerely,

ERNEST C. MARSHALL.

NASHVILLE, TENN.

Your timely editorial, in the November issue of the JOURNAL on "The Need of an Association Home," appears to have started a progressive ripple that seems likely to become a wave, and I hope the circle will spread to the shore on every side, and land that \$50,000 building in some good central location, like Cincinnati or St. Louis. Then every once in a while we can have a "home coming," and everybody make an earnest effort to be present at the family reunion.

They say "Three moves is equal to a fire," and we are now on our third one since my time, and I think it is getting to be time we were settling down and trying to accumulate something, we can leave, to show those who follow, that we have not lived entirely unto ourselves. To do this, it is necessary that we have a store house of our own, for we can never accumulate while we are moving from "pillar to post."

Twenty-five dollars from each of 2500 members will put your \$50,000 building there and leave something towards establishing those laboratories and furnishing it. If we can get the building, we ought to be in as good a fix as the fellow who was discussing the marriage question with his best girl, and told her if she thought she could furnish a little bread and meat he would try and scuffle around and get up what water they

would need; if we can get the building in the right location, perhaps we can skirmish around and keep it going.

I certainly think we need the "Home," and stand ready with my \$25 whenever called on for that purpose.

Trusting that this agitation may not end in talk, with kind regards and best wishes, I am,

Very sincerely yours,

J. O. BURGE.

MEADVILLE, PA.

Commenting upon your very timely editorial in the November issue of the JOURNAL on "The Need of an Association Home," I desire to express my hearty approval of the scheme and would like to add a few pertinent observations. Surely an organization that has withstood the strain and stress of three-score years has amply proven the need for its existence and ought to merit the consideration of loyal pharmacists everywhere. It is well nigh impossible to reckon the vast amount of real constructive work already accomplished by the A. Ph. A. during this long period, but it is within the premise of truth to say that no other single agency has performed such signal service for the uplift and advancement of pharmacy—a service which has inured to the weal and welfare of every devotee of pharmacy throughout the length and breadth of our land.

The time has come in the life of the Association when its nomadic character should close and its belongings and interests properly conserved and preserved in a fitting home. The need of such a permanent abiding place has long been apparent to those who have the Association's interest at heart, the chief obstacle to its realization being the necessary funds to carry out the project. To accomplish this end some such scheme as the following might, if put in operation, prove successful; it is estimated that there are upwards of 45,000 pharmacists engaged in the calling in these United States, every one of whom either directly or indirectly, has come under the influence of the Association's work and been a partaker of her manifold benefits. If each one of these were to contribute but a single dollar, it would make a most auspicious beginning. Some would contribute more, and a few of the more loyal ones would contribute quite generously

toward the success of such a worthy movement. Aside from this community of interests for a specific purpose, this unity of spirit and action is a tremendous factor when exerted in any worthy movement, and the banding together of this number of pharmacists in a common cause would very materially augment our sphere of influence and usefulness as a profession. I need but call your attention to our sister Association—the A. M. A.—whose membership has been increased enormously within recent years through systematic organization until today it stands out pre-eminent, a powerful body working incessantly for the betterment of the medical profession everywhere.

If this matter could be properly brought to the attention of the pharmacists of the United States in its larger and wider significance, thousands of our coworkers would welcome it as a duty rather than an obligation. This spirit was thoroughly manifested in the keen enthusiasm with which pharmacists everywhere rallied to the fund of our lamented friend Hallberg. It was truly a fine testimonial to the integrity and worth of the man. Rightly considered, the rank and file of our profession owe this obligation to themselves—appreciation in part for the large measure of enduring work accomplished by the Association.

In addition to the various uses for the home as tersely outlined by Secretary Beal, the building would become a repository for all things pharmaceutical and of pharmaceutical interest; a storehouse for such miscellaneous pharmaceutical apparatus, implements, etc., with a view of establishing a sort of national museum of historic interest to pharmacists; and finally it would stand as a fitting and suitable monument to the large and growing number of American pharmacists who feel an instinctive pride in their chosen calling and who would gladly give some tangible expression to this sentiment once the home is an assured fact.

Let us hope that all practitioners of the art may become interested in this worthy movement and that ultimately some definite memorial may be erected and dedicated to the glory and honor of the profession in which we serve.

Cordially and fraternally yours,

P. HENRY UTECH.

BOSTON, MASS.

Your circular letter about the suggested "Home" for the Association came to me several days ago. I can see nothing but good in such a plan, if it is carried out right, and I am writing to endorse it. Besides the obvious advantages enumerated in your letter, there is another found in the added dignity and prestige which such a headquarters building would give to the Association.

THEODORE J. BRADLEY.

DENVER, COLORADO.

Replying to your circular of inquiry regarding the establishment of Official Headquarters and Experimental Laboratory for the working out of National Formulary and U. S. P. Problems, feel that it is a step in the right direction. Pharmacy has had very little recognition by our government, and it appears to me the establishing of the permanent Official Headquarters, such as outlined, would give us the prominence and recognition so sincerely desired, and you can rest assured that our firm, as well as myself, will do everything we possibly can to aid in this work.

Yours very truly,

E. L. SCHOLTZ

LANSING, MICH.

As a member of the A. Ph. A. I most heartily cast my vote in favor of a permanent official headquarters and will gladly assist as far as possible to maintain such a project if carried out satisfactorily. I would be more especially interested in the experimental laboratory feature of such a place. It has often occurred to me that the A. Ph. A. was not up to the minute in not maintaining such a laboratory at the present. It seems to me that a laboratory of this nature would be of great value not only to the A. Ph. A. members but to the entire pharmacy profession.

In my work as a food and drug official I often find discrepancies in the U. S. P. and N. F. which can only be definitely settled by extended laboratory work. At present each laboratory must settle these questions for themselves. Owing to the various other duties one is called upon to perform in an official capacity we do not find time to devote to these problems, consequently many of them go unsettled. Here such a laboratory would be of vast importance to all who find it necessary to use the U. S. P. for their legal standard. Another valuable reason for estab-

lishing such a laboratory comes to my mind at this time. I am investigating some of the medical and pharmaceutical fakes that are parading on the market. As you know, the A. M. A. and also some State Departments have investigated these things for years, but for all the publicity they seem to flourish as much, and I believe more than ever before. Here is another line of work that could very profitably be taken up by an association laboratory. It seems that this practice will never be stamped out until all of us get back of these things and let the public know how they are being swindled.

Very respectfully yours,

F. L. SHANNON

BALTIMORE, MD.

Your circular letter asking for an expression of opinion in re "of the utility and desirability of a permanent home for the A. Ph. A." to hand. In reply I would say there is nothing that would be of more permanent benefit to the organization, as the research work done therein would more than repay any expense incurred, and would be of lasting benefit; beside, the urgent necessity of having a proper place of preserving the property of the Association.

Pardon me if I have gone farther than requested, but it seems to me should the project mature, it should be placed at our nation's capital, Washington, D. C., as this is the great Mecca of our own traveling public, as well as that from abroad.

With best wishes for the success of the A. Ph. A. in all its efforts, and the success of her General Secretary, I remain,

Fraternally,

LOUIS SCHULZE

PHILADELPHIA, PA.

You have asked for some expression in regard to a permanent home for the American Pharmaceutical Association, and I comply herewith.

No man would dare question the need of an Association home after reading your editorial in the November issue of the *JOURNAL*, and I think that you take the proper attitude, when you say that "since the A. Ph. A. has given its services freely to the whole of American pharmacy, why should not the whole of American pharmacy contribute to a plant which would enable the Association to

greatly increase its usefulness to the cause which it represents?"

Our Association has reached its sixty-first year, and I think most of us will agree that it is old enough to go into housekeeping. The age of sixty-one calls to my mind the following rhyme:

"Brothers, I am sixty-one;
Now my work on earth is done;
Calm should follow after storm;
Hand me down the Chloroform."

But let us put it in another way for the good old A. Ph. A.:

Children, I am sixty-one;
My work has just begun;
To do the greatest good for many,
I need a home with room a-plenty.
If you'll just help me get a start,
You'll gain in wisdom, science, and art,
And more, you'll never need to roam
In search of true friends or a home.

I sincerely hope that you may bring this project to a realization and when the time comes, I shall help the good work as much as possible.

Trusting that you will pardon my attempt at poetry, and wishing you all possible success, I remain

Very truly yours,

ROBERT P. FISCHELIS.

BLUFFTON, IND.

I think that the "Association Home" suggestion is a good one and that it should meet not only with the approval, but assistance, of every pharmacist in America.

The establishment of this home will mean more to American pharmacy than one can possibly imagine or hope for.

The suggestion is right, the time is right, let every pharmacist assist and cooperate to make this "Association Home" a reality in the near future.

Yours respectfully,

M. A. STOUT.

NEW YORK CITY.

This is my first opportunity to answer your circular letter relative to an A. Ph. A. Home.

Of course, the project meets with my heartiest approval, for I have been one of those who have dreamed of such a pharmaceutical centre these many years. In 1901 (American Jr. Pharm 73, pp. 91 and 92) I

urged that the proposed Procter Memorial take the form of a Pharmacy Building with research laboratory, where U. S. P. and N. F. revision work could be done. It is but a small step to the greater conception of an A. Ph. A. home, with offices, library, historical collections and such research laboratory, that was suggested ten years since.

Most earnestly do I hope that your plan will reach fruition and if I can do anything in my humble way to help the cause, by all means command me.

Sincerely yours,

H. V. ARNY.

NEW YORK CITY.

I am in receipt of your circular letter, under recent date, concerning the need of an Association Home.

That such a need exists cannot be denied, and I cannot imagine a dissenting voice among our large membership.

The next step will be to provide ways and means to accomplish the desired object. This means not only the establishing of an Association Home, but also the providing of means for its proper maintenance.

I feel confident that this most worthy object will be consummated in the near future and shall esteem it a privilege to be permitted to assist those interested in its advancement.

Very truly yours,

GEO. C. DIEKMAN.

MARSHFIELD, OREGON.

The proposition to establish a permanent home for the A. Ph. A. is a good one, and if the funds to meet the expense of same are in sight, the plan should be carried out as soon as possible.

The location of the headquarters should be as near the center of population as possible. It seems to me that St. Louis, Mo., would be the right place. Many members, no doubt, would favor Philadelphia because of its being the location of our oldest college of pharmacy, and of its being the cradle of scientific pharmacy in America, and its having been the home of so many illustrious leaders in our profession. It seems to me, however, that accessibility to the greatest number of the members should be the first consideration. Hoping to see the plan speedily carried out, I am,

Yours very truly,

J. LEE BROWN.

SAN FRANCISCO, CAL.

Indeed I am most earnestly in favor of the Association having its own home. Besides all the advantages you point out in your circular letter, how exceedingly nice it would be for a member sojourning in the east to direct his steps toward his own "home" where he could meet kindred spirits and find kindred interests. It would seem to me that this more than anything else could cement the interests of the Association.

With sincere regards, I beg to remain

Respectfully yours,

FRED I. LACKENBACH.

ST. JOSEPH, MO.

First, last and always, let me say that I am in hearty accord with this "Home" movement. In the way of furnishing a permanent headquarters, a laboratory and a safekeeping place for proceedings, etc., of the Association, I do not believe the movement can be over-estimated.

Another and still more valuable asset to me it would be—and I believe to every other member of the A. Ph. A.—is an everlasting monument of American pharmacy. A memorial it would be to those who have striven and died in pharmacy's cause; a pleasure for us now laboring in the field; and a perpetual joy for the oncoming pharmaceutical generations.

If at any time I can be of assistance to you or to the other officers in furthering this cause, I would be only too glad to render whatever service I might be able to give.

Yours respectfully,

BERNARD W. McFALL.

BOSTON, MASS.

Your editorial in the November JOURNAL of the A. Ph. A., "The Need of an Association Home," is certainly in the line of progress for which the Association stands.

The advantages of a carefully preserved library with laboratories for pharmaceutical and chemical research, combined with permanent official headquarters, would be inestimable.

In my opinion it would be in keeping with the dignity of the A. Ph. A. and another step towards the advancement of this organization for that which is highest and best in American pharmacy.

I believe that loyalty to the Association

would induce many members to contribute toward this object.

Yours sincerely,

JOHN G. GIDDING.

NEW BRUNSWICK, N. J.

In response to your circular letter in regard to the new home for the Association, would say that I greatly favor such a movement. I have thought that it might be well to see what could be done in combining such a home with the Lloyd library; possibly this is not feasible.

Another suggestion occurred to me that the financial end could possibly be reached by a movement to increase our endowment fund.

Very truly yours,

F. B. KILMER.

PHILADELPHIA, PA.

I wish to raise my voice in approval of your suggestion that the A. Ph. A. should have a fireproof building as a permanent home, in which to preserve its incalculably valuable records—for the archives of the A. Ph. A. are an important portion of American history, and we should appreciate their value to such a degree as to provide for them a safe repository.

God speed the day when the realization of the well-nigh assured guess as to its accomplishment becomes a fact—to be chronicled in the history of American pharmacy.

I feel certain that sufficient pride exists amongst the rank and file of our members to guarantee the proper maintenance of such a building, and were the Association possessed of such a very valuable asset large numbers of those out-side of the fold of the A. Ph. A. would hasten to become enrolled as members.

If there is *any* possibility of the Association being enriched in the manner aforementioned, keep an eternal vigilance upon the opportunity, so that nothing can cause the plans to miscarry from any cause whatsoever. It seems too good to be true. Then we could take up lines of activity that properly belong to our Association, which others have attempted to carry on—with very varying results.

Those of our calling responded to the appeals for contributions to liquidate the mortgage upon the home of our dearly beloved and lamented Hallberg in a generous manner, speedily, and the object sought was an accom-

plished fact in a short space of time; and I firmly believe that they will stand by and support our beloved Association just as nobly and generously, when requested to do so, for such a praiseworthy forward movement in the interests of each and every votary of pharmacy.

I cannot see how anyone with a drop of true-blue pharmaceutical blood in his frame can be opposed to this windfall to his calling, and I would be greatly surprised to hear of any opposition to the project.

May this possibility become a reality in the near future is the sincere prayer of

Yours cordially,

FRANKLIN M. APPLE.

<>

THE NATIONAL DRUG TRADE CONFERENCE.

In order to learn the true status of the Harrison Bill and Mr. Harrison's intentions I went to Washington on February 20th, after having made an appointment by wire. Mr. Harrison received me, was the same courteous gentleman that he was at the time of our Conference, gave me all the time I wanted and specifically advised me that on account of the congested condition of affairs in Congress in relation to the appropriation bills he had concluded not to report the Harrison Bill out at this session, but that it was his intention to present the bill immediately after the convening of the special session of Congress and to use every effort to have it enacted. He feels that any draft approved by the Conference should be the foundation of the new Harrison Bill, and as we all realize that in our haste the Conference Bill was not perfect and could be altered in some particulars to advantage I feel that it is the duty of the accredited delegates to the Con-

ference to get busy, offer such suggestions and amendments as they have to the Conference Bill, have them submitted to a special Committee or to the Executive Committee, have a draft prepared and have the draft prepared by the Committee together with the different suggestions submitted to the Conference for its approval or correction at a meeting which I feel should be held early in April.

The form of organization of the Conference will require a motion to carry this into effect, to be submitted to the Executive Committee or to the members of the Conference.

I hope you will get busy on this proposition at once and will be very glad to have any suggestions that you may have to offer.

J. C. WALLACE,

President National Drug Trade Conference.

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FENCE FOR STOLEN DRUGS.

One ounce of aspirin and two balls of opium were among the loot stolen by an employe of Parke, Davis & Co.'s Drug and Chemical Department, who engaged himself under the name of Frank Myers. It came out in the course of the trial that his correct name was Anthony Kraft. The culprit was fined \$10 or thirty days.

There is reason to believe that there is a widespread conspiracy having its wires in the wholesale and manufacturing concerns of the country with a regular system of fences, provisions for reassortment of stocks into half dozens, dozens, etc.; and that this accounts for the peddlers who visit retail druggists in certain sections, offering them particular items at prices that really put the retail druggists upon notice that the goods are stolen.

SUDDEN WHITENING OF THE HAIR.

In the case reported by Loeb a man of 51 became paralyzed on the left side in consequence of a cerebral hemorrhage and was unable to speak for a week. By the end of this time the moustache, eyebrow and hair on this side had turned entirely white while on the other side the normal color had been retained. Berger has reported two similar cases of the hair turning white on the side of the paralysis, and Loeb regards this material as sustaining the assumption that nervous influences alone are able in certain conditions to turn the hair white suddenly.—*Journ. A. M. A., Vol. LX, p. 635.*

Of General Interest

NATIONAL ASSOCIATION OF MANUFACTURERS OF MEDICINAL PRODUCTS.

THOS. F. MAIN, PH. G., NEW YORK, N. Y.

The first annual convention of the National Association of Manufacturers of Medicinal Products was held in the state apartments of the Waldorf Astoria Hotel, New York City, February 11 and 12, 1913.

President Frank G. Ryan, after calling the meeting to order, accorded the privileges of the floor to delegates from sister associations, when Frank E. Holliday, General Representative of the National Wholesale Druggists' Association; Henry W. Merritt, President of the National Association of Retail Druggists; Thos. F. Main, Honorary President of the American Pharmaceutical Association, and Dr. W. C. Abbott, of the American Association of Pharmaceutical Chemists, presented greetings from their respective associations, with cordial good wishes that the meeting might be a most successful one and that the Associations might work in unison to solve problems of common interest to the drug trade.

In President Ryan's admirable address he stated that the first year of the Association abundantly proved that it had a great field for work and could become of immense value not only to its own members, but to all branches of the trade; he noted the necessity for securing state laws which conform to the Federal law, making the Federal law the standard for all; that it should be part of the work of the Association to supply proper data upon which laws can be formulated, legislators generally welcoming real information of an unbiased character; it should be the aim not only to oppose laws inimical but to suggest methods by which the interests of all may be properly conserved; he believed that officers delegated to carry laws into effect should confine their efforts to enforcing the laws as written and approved by legislative bodies, being careful not to encroach on the law-making power.

The reports of the officers and committees were of a very high order; the reports of Secretary, Committee on Legislation, and the delegates to National Drug Trades Conference, taken as a whole, form a valuable resume as to the enormous amount of legislation affecting the drug trade attempted during the past year, and gave special attention and prominence to the preamble and resolutions passed by the National Drug Trades Conference (called together by the American Pharmaceutical Association) on uniform State and Federal laws and to its admirable work in preparing a substitute for the Harrison Anti-Narcotic bill, which was accepted by Congressman Harrison and introduced into congress as H. R. 28277, which if passed will save the drug trade of the country at least \$1,500,000 a year, while it is entirely in accord with the aim and purpose of the proposed legislation.

The following resolutions were adopted:

Urging the postoffice department to increase from 12 to 16 ounces the quantity of liquids that may be sent by mail.

Approving of one-cent letter postage.

Ordering the Executive Committee to give consideration to imitations of labels and trade marks, with particular reference to imitations originating in foreign countries.

Requesting the Bureau of Weights and Measures of New York state to interpret their regulations as to tolerances, to the definition based upon an interpretation of statement of net weight, measure, or amount, as meaning "not less than a minimum quantity."

Protesting against the admission free of duty of medicines, surgical instruments, and appliances for use of hospitals which receive pay for any services in the treatment of patients.

Recommending the Executive Committee to take up with the authorities at Washington the subject of imposition of rectifiers' tax on manufacturers who recover alcohol from exhausted drugs.

Providing for a special committee to report on "suitable containers" in their relation to

deterioration of medicinal and pharmaceutical products.

Urging upon the United States postoffice department the issuance of an order extending special delivery service to parcel post packages.

That any legislation restricting interstate commerce in narcotic drugs should make no discrimination on the basis of dosage between liquid and solid forms of medicines.

The Association also adopted a minute reaffirming its attitude on the subject of anti-narcotic legislation as expressed at its initial meeting; it approved the action of its delegates to the National Drug Trades Conference in cooperating to eliminate objectionable features from the Harrison anti-narcotic bill, which resulted in the amended bill H. R. 28277, and in the event of this bill not becoming a law, instructed its delegates to the conference to cooperate in securing a just and reasonable measure.

The officers for the past year were unanimously elected to serve a second term: President, Frank G. Ryan, of Parke-Davis & Co.; Vice-President, Alolph G. Rosengarten, of Powers-Weightman-Rosengarten Co.; Treasurer, Dr. Henry C. Lovis, of Seabury & Johnson; Secretary, Charles M. Woodruff. Executive Committee, Dr. Alfred R. L. Dohme, of Sharp & Dohme; Charles J. Lynn, of Eli Lilly & Co.

At the banquet following the close of the meeting, Clarence O. Bigelow, President of the New York Branch, represented the American Pharmaceutical Association; the special guests of the evening were Professor Joseph P. Remington, who spoke upon the progress of the revision of the United States Pharmacopoeia, and Dr. Carl L. Alsberg, the newly appointed chief of the Bureau of Chemistry of the United States Department of Agriculture, whose remarks, as being his first public address since his appointment, were listened to with great interest. Caswell A. Mayo spoke for the pharmaceutical press.

Doctor Alsberg's personality and his moderately conservative speech favorably impressed his hearers and it is safe to say that he enters office with the best wishes of the entire drug trade, coupled with the hope that he may be able to enforce the National Pure Food and Drugs Act uninfluenced by the theories of fanatics or the schemes of the self-interested.

POLICY OF THE BUREAU OF CHEMISTRY IN ENFORCING THE FOOD AND DRUGS ACT.¹

CARL L. ALSBERG, CHIEF OF THE BUREAU OF CHEMISTRY.

I am particularly glad to make this, my first public statement of policy, before you gentlemen because I believe that the Bureau of Chemistry has no more important task than the problem of dealing with drugs and medicinal preparations. The brevity of my tenure of office renders what I am about to present to you, I regret to say, merely an outline of the principles by which the Bureau of Chemistry is to be guided. I would far prefer at this time to make no statement at all, but to wait and let the work of the Bureau speak for itself. As it is, I feel like a man who is "kiting" a check. I hope that the checks which in behalf of the Bureau I am about to make out to the order of the people may be amply covered before they are presented for payment. I realize fully that this will be no easy task.

In addressing an audience such as this, I feel that much that I would say to other industries would be out of place here. To most branches of the food industry, for example, I would say that the Bureau hopes to cooperate with them in placing their processes upon a scientific basis, in eliminating waste, and in utilizing by-products to the best advantage. I would say that the Bureau hopes to do for them what other bureaus of the Department of Agriculture are doing for the farmer. Great benefit to the consumer must result from such a source. To say such things to you would be almost an impertinence, because, if I am correctly informed, you gentlemen are fully awake to the value of science and research in practical manufactures. Most of you employ a large staff of chemists and other experts, and practically all of you are constantly conducting investigations designed to perfect your output, to cut down the cost of production, to improve existing products or to create new ones for the benefit of mankind, as well as of yourselves. Many of you realize that the time

¹An address delivered before the National Association of Manufacturers of Medicinal Products, Feb. 12, 1913.

has come for the cooperation of the medical investigator and the manufacturer of remedial agents. It may be that there are some who fear that such cooperation will commercialize the medical profession. I am not one of them. It has been amply shown that the solution of many therapeutic problems may be largely a matter of money. It often takes tremendous resources to carry such a work to a successful issue. Few private investigators and few institutions command them. Here manufacturers may and do step in to help the investigator. As you all know, some of the greatest therapeutic advances of recent years, notably Paul Ehrlich's salvarsan, or 606, and the coal tar products, would have been impossible except for such cooperation. The fact that the manufacturer offers his help as a speculation by which he hopes to gain does not alter the fact that the net result may be of immense benefit to mankind.

While, therefore, I wish to assure you that the Bureau stands ready to cooperate with your Association, because such cooperation is to the best interest of all, we feel that you have learned the lesson of the application of science to practical things so thoroughly that only in the exceptional instance do you need a helping hand.

There is, however, a different field which is crying for cooperation between you gentlemen and the interests allied with you and the government. This is the matter of the control and regulation of the handling and sale of drugs and their preparations, particularly patent medicines and the narcotics. I know that in appealing to you on this subject I am entering debatable land. But this the Bureau has to do sooner or later, and I am of the opinion that it can not begin too soon.

The eyes of the people have, in the past, centered upon the Department's struggle for pure foods. The work of the Department has, I think you will all admit, been very successful in improving the quality of our foods and preventing the grave forms of fraud and adulteration. We realize fully that much remains to be done, but public confidence has been won; and precedents have been created. No backward step will be taken. There will be no let-up in the enforcement of the Pure Food and Drugs Act. If at any time we seem to accomplish less than appears to you possible, I trust you will realize

that under the law our powers are limited; that we have no control over local conditions, and that we can control such local conditions only indirectly through our influence on imports and on interstate commerce. Conditions throughout the Union will be right only when each and every state passes, and enforces, adequate food laws; and when these laws have been unified and harmonized with those of the federal government. I hope that the consumers in every state where such laws are inadequate or laxly enforced, will bring such pressure to bear that these local conditions, over which the Bureau has no control, will be remedied.

While the efforts of the Department of Agriculture, in so far as the control of the food products over which it has jurisdiction is concerned, have been attended with considerable success, this has been true to a less degree with drugs and medicines. The fault has been in part with unforeseen loopholes in the law. I do not wish to imply that nothing has been accomplished. On the contrary, as you are well aware, through the great powers over imports vested in the Secretary of the Treasury, the Department of Agriculture has succeeded in keeping out of the country all crude drugs of an inferior quality.

The benefit to medicine and pharmacy has been immense. To accomplish this end is a very simple matter, because the Secretary of the Treasury has absolute power to exclude from the country any drug which may be in violation of law or is deemed injurious to the health of the people of the United States. These treasury decisions are based upon reports by the Secretary of Agriculture, of findings made by the Bureau of Chemistry.

These powers of the Secretary of the Treasury have been exercised not only over crude drugs and medicinal preparations, but also over so-called patent medicines whenever these made claims upon the label of curative powers which were false or misleading in any particular. Such quack medicines defraud those suffering from the pernicious activity of their imagination. They do incalculable harm to the misguided sick who grasp at the false hopes they hold out. The Secretary of the Treasury, on the recommendation of the Department of Agriculture, is excluding all such undesirable aliens. If we must suffer from and be mulcted by the proprietors of nostrums we may now have at least the poor comfort of knowing that

we suffer injury at the hands of our own people and that we keep in the land the money we pay to boot. No legislative tariff wall could more effectively protect the home industry. I regard it as the most important immediate duty of the Bureau to curb a traffic between the states in worthless nostrums.

It is true that the foreign nostrum which is excluded today because of the extravagant claims on the package may be admitted tomorrow if the label has been purged of these objectionable features. Nevertheless the effect is most excellent for a quack medicine which makes no extravagant claim on the package must, in order to find a large sale, make such claims in its advertisements in the press. This most of the alien nostrums apparently find impractical to do, so that the action taken by the Secretaries of Agriculture and the Treasury is very generally effective in protecting the people from alien frauds.

It is far different with the domestic nostrums. Because the domestic manufacturer knows how to advertise, no existing Federal law can adequately protect the people. The Sherley Act will, we hope, enable us to compel the removal of all false and fraudulent matter from the package. It will, we hope, enable us to compel the removal from the package of all therapeutic claims that can not be substantiated. We are confident that in spite of reams of testimonials these claims will shrink into insignificance in the vast majority of cases. But even if we succeed in this, and we shall leave no stone unturned, the beneficial effect will be more apparent than real. The Sherley Act is at best only a partial protection. It gives the Department of Agriculture power to regulate the labels of these nostrums, but not their advertising. This has, to some degree, been controlled through the Post Office Department. As long as our press continues to print the advertisements of nostrums, ways and means will be found to hawk them about the country. Several such ingenious schemes have already been put into practice.

Gloominess as the outlook seems, there is yet a ray of hope. It is the attitude of a small but powerful portion of the press itself, which has voluntarily scoured its advertising columns till they contain only clean and honest matter. The movement is spreading. Let us hope that its progress will be so rapid that

it will make legislative control of advertising unnecessary.

That public sentiment and a sense of justice and public service induce individuals to sacrifice their own self-interest, is one of the hopeful signs of the times. It gives one a thrill to realize that this spirit is not peculiar to the press which one expects to fashion the country's ideals, but that it is to be found everywhere. It has been exemplified in a most striking way by one of the largest concerns of the country, which has announced that it will no longer deal in patent medicines. It has substituted non-secret preparations of recognized merit. Let us hope that others will follow the trail thus blazed. I am proud to say that the chemist of this concern, who, I am told, was probably involved in this pioneer reform was formerly a scientist in the Bureau of Chemistry.

Even if we succeed in protecting the people from quack medicines, a great task remains. This is to protect them from habit-forming drugs, such as opium and cocaine. We all know their sad effects. We all are agreed that something must be done to control their sale and distribution. The only differences of opinion concern the best means of accomplishing this end. Since it is often stated, without serious contradiction, that only one-third of the cocaine which is imported is used for legitimate therapeutic purposes, all must agree that the situation demands drastic measures. Without the help of the Federal Government, no reforms can be introduced because the States by themselves can not control the supply. As long as State officials have no means of ascertaining how much opium and cocaine is being shipped into a State and to whom it is consigned, it is evident that they are powerless to limit these and similar drugs to their legitimate uses. If these drugs were produced in this country, it would be exceedingly difficult to keep track of and to trace the supply. The situation would be analogous to that of moonshine whiskey. It would require an expensive police force to control the supply of these drugs and it is doubtful whether this control could ever be made efficient. Fortunately the situation is not so difficult. Virtually all our supply of these drugs is imported. It is, therefore, feasible if the State and Federal Governments cooperate to keep an accurate record of the fate of all of each consignment imported

through the wholesaler and jobber down to the pharmacist, physician, dentist and veterinarian. If the Federal Government does its share, State officials by an examination of Federal records will be able to learn what quantities of narcotics are coming into the State and to whom they are consigned. Each State will then be in a position to control these scourges of our peoples. If it fail to do so it must shoulder the responsibility.

The Federal Government can bring this about by virtue either of its taxing power or by virtue of its control over interstate and foreign commerce. The Harrison Bill now pending before Congress is based on the taxing power, proposing as it does that each handler of these drugs must be licensed by the Commissioner of Internal Revenue. To me it seems a step in the right direction. Should it fail to pass or should it prove ineffective it is certain to result in far more drastic measures. This evil must be stamped out. I propose to use every lawful means at the command of the Bureau of Chemistry to accomplish this end.

Gentlemen, that is in essence what I have to say tonight. I know that I have told you nothing new. If I am in error in any particular, I stand ready to be set right. My excuse for telling you an old story is that I could not otherwise make clear to you my attitude on certain matters which are vital to us all. I wish to have a clear understanding with you. I hope that now we understand each other and that, therefore, we can grasp hands across the table and pledge each other to work together for the common good.



ADDRESS OF THOS. F. MAIN TO THE NATIONAL ASSOCIATION OF MANUFACTURERS OF MEDICINAL PRODUCTS.

Mr. President and Members of the National Association of Manufacturers of Medicinal Products:

I deem it both a pleasure and a privilege to be delegated by President William B. Day of the American Pharmaceutical Association, which is the oldest Society of the drug trade that is national in its character, to bring its greetings to your Association of Manufacturers of Medicinal Preparations, which I am

informed is the youngest national organization of our trade.

History seems to establish the fact that the manufacture of medicinal chemicals and pharmaceuticals in the United States was largely stimulated by some research work done by a young student at the College of Pharmacy of the City of New York in 1846, who discovered that a large percentage of the chemicals and pharmaceuticals then imported, and for the supply of which the trade relied on European manufacturers, was grossly adulterated. This discovery of Ewen McIntyre, for that was the name of the young student, resulted first, in the passing by Congress in that year of a law which required all imported drugs to conform to certain general standards of purity, and second—to the founding in 1852 of the Society I have the honor now to represent. The American Pharmaceutical Association, the aim of which as stated in its constitution, being:

"To unite the educated and reputable pharmacists and druggists of America, in securing—the improvement and regulation of the drug market by preventing the importation of inferior adulterated drugs"—to improve the science and art of pharmacy by diffusing scientific knowledge,—by fostering pharmaceutical literature, developing talent, stimulating discovery and invention," and—mark this, gentlemen—*by encouraging home production and manufacture in the several departments of the drug business.*"

That home production and manufacture have been encouraged in the sixty-one years that have elapsed since the American Pharmaceutical Association was founded, the formation of your own Association is an eloquent witness, and at this time it is safe to say that our makers of medicinal chemicals turn out goods equal to the world's best products and that in the manufacture of elegant and standardized pharmaceuticals our laboratories practically lead the world.

Gentlemen, the young student of 1846 to whose research work the passage of the national drug law of that year, and the formation of the Society I represent was largely due, passed into the higher life a few weeks since, honored and respected by his associates in our Society of which he had been a member for forty years, by the pharmacists of the United States, and by all

who were privileged to know him in this city of his adoption. What a marvelous development in all branches of industry and manufacture occurred during his lifetime, and in this development the manufacture of medicinal chemicals and fine pharmaceuticals did not lag behind.

In the evolution of the manufacturing industries in the United States, it was inevitable, that the economy and ready standardization secured by manufacturing drug products on a large scale, would relegate to the splendidly equipped and manned laboratories of the present day, the manufacture of concentrated medicines of large use, as well as those demanding a high degree of technical skill, or special apparatus to manufacture; and it was also inevitable that in a manufacture the products of which have so much to do with the prevention and cure of disease, the mitigation of suffering and the preservation of human life, the highest standards must be maintained, and that no mistaken notions of a manufacturer, rivalries between manufacturers, no distrust or jealousies, no customs not in accord with sound business principles, can be allowed to interfere with the highest standards of excellence in all drug products.

And so, gentlemen, I believe that your Association came by evolution in due process of time, many of your members are members of my own Association; they know that in union there is strength, and it is eminently fitting that your Association and ours should stand together in work for the promotion of the best interests of Pharmacy and Medicine, and in creating and maintaining a standard of professional honesty equal to the amount of our professional knowledge, with a view to the highest good and greatest protection to the great American people of which we are a part and which it is our privilege and our duty alike to serve.

The American Pharmaceutical Association extends to your Association as a body its best wishes that you may have a most successful meeting, and invites your individual members who are not already connected with our Association, to join us, ours being the one Association in which all people connected with the drug trade, whether they are teachers, theorists, pharmacists, jobbers, manufacturers, or importers, meet on a common level, secure a common view point, and are thus better enabled to work together for the common good of all the people.

NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

MEETING OF THE EXECUTIVE COMMITTEE.

WM. MITTELBACH, BOONVILLE, MO.

To start in operation the Dodds resolution on reciprocal registration, which was adopted at the Denver meeting, the Executive Committee of the Association deemed it best that a meeting of the committee be held at some central point. Chairman T. A. Miller, of Richmond, Va., thereupon called the same to be held at St. Louis, Feb. 4, 1913.

Promptly at the appointed hour and place, every member of the committee—T. A. Miller, of Richmond, Va.; J. C. Burton, of Stroud, Okla.; Charles E. Zinn, of Kansas City, Mo.; A. F. Sala, of Winchester, Ind., and Wm. Mittelbach, of Boonville, Mo., were on hand and the work taken up.

The meeting was held at the Planters hotel in one of the parlors. As invited guests, Burton Cassiday, of Terre Haute, Ind., president of the Interstate Association; H. G. Ruenzel, of Milwaukee, Wis., president of the Wisconsin board; Chas. Gietner, member of the Missouri board, and Dr. H. M. Whelpley, editor of Meyer Brothers Druggist, were on hand and entered freely into the discussion of the subjects presented. After an all-day consideration, it was unanimously agreed to push the subject matter to a successful issue as outlined in the Dodds resolution.

Secretary A. F. Sala was instructed to prepare articles of agreement embodying the several principles and conditions of the resolution and circulate them among the active members of the Association for their endorsement and signature.

The \$5 National fee which is being objected to by two or three members of the Association, was carefully weighed and considered and finally fully approved by the Committee. Secretary Sala stated that about 40 applications for reciprocal registration had passed through his hands since the Denver meeting, and not one objected to paying the fee; showing conclusively that those desiring to take advantage of the arrangement, were willing to contribute toward effecting the same.

The Advisory Committee as created under the Dodds Resolution was elected at this meeting, and consists of Charles Gietner of

St. Louis, H. C. Christensen of Chicago, and E. B. Brandis of Richmond, Va. These men have ample time to visit the several Boards and lend their efforts towards harmonizing the work.

The Executive Committee believes that through this Advisory Committee good progress will have been made when the National Association meets at Nashville in August, and that reciprocity between the several Boards will be more nearly realized than obtains at present. This is a big undertaking, and will crystallize slowly. Boards must be patient and give their executive officers time and moral assistance. The personnel of the several Boards of Pharmacy in our country is of the highest character, and all are working towards one end—the better condition of pharmacy. A little more confidence is needed, and more liberal construction of the standard upon which we base comparison of our work.

Every one present at this meeting of the Committee believes the plan feasible, and that with proper activity and aggressive methods, the Dodds plan will solve the proposition.



A TRIP TO EUROPE.*

During the last decade trips to Europe arranged by societies of all kinds have been undertaken with great success. Singing societies, veterans of the German army, teachers' associations, and various scientific societies have visited England, France, Germany and other parts of Europe and derived much pleasure and instruction from these trips.

These visits have been reciprocated by Europe, and a number of social and scientific societies from England and Germany have come to see our customs and institutions. No wonder, therefore, that American pharmacists should also think of such a journey, and the committee appointed by Dr. Ch. F. Klippert, the President of the German Apotheker-Verein of New York, and headed by Dr. W. C. Alpers is perfectly timely. Nor can there be any doubt that such an enterprise can best be undertaken by the Apotheker-Verein, whose members all speak two or more languages, and many of whom have visited Europe repeatedly and are therefore familiar with the traveling conditions of the various countries.

The idea of such a trip by pharmacists is not new. Some years ago, at the occasion of the world's fair at Paris, the American Pharmaceutical Association appointed a committee to submit plans to visit the fair in a body and hold the meetings on the steamer during the trip across the ocean. But many members feared that in case of inclement weather these meetings might prove a failure, and others did not like the idea that pleasure and entertainment should have a deciding influence on the selection of the place of meeting, and the project failed. A good financial plan was also lacking, and many feared the height of the expenses.

Profiting by the failure of that venture the present advocates of the plan hope to avoid these cliffs. In the first place, this is to be a general enterprise, open to every pharmacist and his friends, so that no constitution or by-laws of any existing society will be interfered with. As to the expense, it is true that but few of our fellow-pharmacists would be able to draw the full amount—at least \$150 or \$200 for each person—out of their business at one time, but with the aid of proper financing this sum can be saved gradually. Suppose the trip will take place in two years, arrangements of regular monthly contributions can be made, which the contributor may withdraw at any time if he will not join in the enterprise. Monthly payments of \$5 would accumulate to more than half the required sum, and \$10 monthly be more than sufficient to defray all expenses. Everybody knows that it is much easier to save \$10 a month than to draw \$200 at one time.

The trip itself would serve a double purpose; first, pleasure and recreation, and second, instruction and information, and each participant can follow his own inclinations in this respect. The most beautiful parts of England, France and Germany—wherever the trip is planned—will be selected, and each one given full occasion to behold and admire whatever is worth seeing. Side-trips to points of interest to this one or that one will also be arranged. It may be supposed that the chemists, pharmaciens and Apotheker of the respective countries will contribute their share to the entertainment of the guests, so that the object of recreation will fully be reached.

At the same time, in planning the trip, due regard will be paid to information and instruction. Cities with world-renowned chem-

*Translated from the "Apotheker-Zeitung."

ical factories, like Elberfeld, Darmstadt, Hoechst, Leipzig, and others will be visited, in order to give the travelers an insight into the enormity of the European chemical industry. Also universities and schools of technology that possess chairs of learning or laboratories of particular interest to pharmacists will not be omitted and these visits will be of particular interest to our teachers and professors.

At the return each traveler will have the privilege of staying longer with friends and relatives in Europe or to extend the trip to other countries. We believe that among the 45000 pharmacists of the United States a sufficient number can be found whose "Wanderlust" will make them join such an enterprise, and we wish the appointed committee the best success.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



CHICAGO BRANCH.

The Conference of representatives of pharmaceutical, medical, dental and veterinary associations to consider amendments to the cocaine law of Illinois held in Chicago, February 11th, was well attended, there being present representatives from the Illinois State Dental Society, the Illinois Veterinarians' Association, the Juvenile Protective Association, the U. S. Customs Service, the Illinois Board of Pharmacy, the Illinois Pharmaceutical Association, the Chicago Retail Druggists' Association, and the Chicago Branch of the American Pharmaceutical Association

The debate was harmonious and many interesting facts regarding the illegal use of cocaine were presented. The statement was made that the druggists of Chicago almost without exception were vigorously observing the present law, but that the cocaine traffic was in the hands of a few debased criminals who obtained their supplies outside of Chicago and "wholesaled" it to others who supplied it to the "fiends." One of the worst features of the traffic is the constantly increasing number of cocaine habitues, largely due to the giving away by interested parties of a few "blows" of cocaine to school children and young habitues of poolrooms and saloons and their instruction in the use of the drug.

By resolution two important amendments were endorsed. First, that a minimum penalty, a fine of \$100 for conviction for first offense, be included in the paragraph on penalties. Second, that it shall be unlawful for a person not a registered pharmacist, licensed physician, licensed dentist or licensed veterinarian to have in his possession at any time more of these drugs than can be obtained by means of a prescription.

As the law at present provides that no person shall sell or give away cocaine, etc., except upon the written prescription of a registered physician (wholesale druggists are excepted) and that no person shall under any circumstances sell or give any of these substances to a person addicted to their habitual use, it would seem as though with the added restriction above proposed it will be quite impossible for these cocaine dealers to escape conviction under the law.

The Conference also expressed itself as strongly in favor of the new Harrison Bill which aims at the federal control of the sale and use of habit-forming drugs.

An appropriation from the State for the proper enforcement of the cocaine law by the State Board of Pharmacy was also recommended.



The February meeting of the Chicago Branch of the American Pharmaceutical Association was held Thursday evening, February 20, in the Assembly Hall of the Northwestern University building. Dr. James H. Beal, General Secretary of the Association, delivered a most instructive and entertaining lecture on the "Limestone Caverns of

America." The lecture was illustrated with views from Mammoth Cave, Kentucky, Wyandotte Cavern, Indiana, and Luray Cavern of Virginia. The views were beautifully displayed with the aid of a modern Bausch & Lomb halopticon. Both the lecture and pictures were highly appreciated by the large audience. At the close of the lecture a rising vote of thanks was extended Dr. Beal and he was cordially greeted by many Chicago friends.

The next meeting will be held on the regular meeting night March 18.

E. N. GATHERCOAL, Secretary.



NEW YORK BRANCH.

A regular meeting of the New York Branch was held February 10th, with President C. O. Bigelow in the chair. There was no report by any officer or committee with the exception of the committee on the progress of pharmacy. Its Chairman, Dr. G. C. Dickman, quoted from the semi-annual report of Schimmel & Co. with respect to the sophistication of oil of bitter almond, oil of cinnamon, oil of clove, oil of bergamot, and oil of cubeb. He also gave brief abstracts of articles on the following subjects: "Lead in Alloys Used Upon Drinking Vessels," "Radium Emanations in Water," "Tests for Dust with Black Filter Paper," "Microchemical Identification of Alkaloids," and "Japanese Investigation of Infusion of Digitalis." In addition he referred to the prevalence of new remedies in Germany and the extent of drug adulteration in the same country, and the aspirin-acetylsalicylic acid controversy.

After being discussed by Messrs. McElhennic, Mansfield, Mayer, Mayo, Raubenheimer, and Weinstein this report was duly received.

Discussions were the order of the meeting. The first topic considered was "Uniformity of Drug Standards," and related to a contribution to the Journal of the Kansas Medical Society, by Prof. L. E. Sayre, of Lawrence, Kansas, entitled "A Plea for Uniformity in Drug Standards and for Uniform Requirements in Dispensing."

Professor Sayre's paper was read by Secretary Hugh Craig; it was an argument for the enactment of laws that would require the drugs dispensed by physicians to conform to the legal standards, and give to the proper State officials the right to inspect the drugs kept on hand by dispensing doctors.

John Roemer, who opened the discussion, pointed out the magnitude of the problem with which the paper dealt and declared that the conditions in New York State where seventy-five percent of all drugs sold were dispensed by physicians, were deplorable because the dispensing doctors gave no thought to the quality of their supplies but considered only the price at which the drugs could be obtained.

Jacob Diner believed that the first steps toward better conditions should be to discontinue the exemption of the physician from the provisions of the pharmacy law. This step he considered necessary for the protection of the public. Pharmacists, he said, could get the aid of the better class of physicians toward remedying the evil, but the physicians must be first assured that the pharmacists' drugs are above criticism. Pharmacists have taken thought in the matter advanced by Mr. Diner, said Dr. G. C. Dickman; and they are, to an increasing extent, putting quality above price.

Prof. J. L. Mayer called attention to the purpose of the American Society of Medical Economics to attempt to raise the standard of doctors' drugs. The carefulness of the pharmacist and his legal responsibilities were pointed out by Otto Raubenheimer who had knowledge of the poor quality of some of the drugs dispensed by physicians.

Dr. Joseph Weinstein was inclined to doubt the accuracy of Mr. Roemer's figures relating to the amount of drugs dispensed by physicians, but Mrs. St. Clair Ransford-Gay thought that Mr. Roemer's figures were too low.

On the motion of Mr. Roemer the matter was carried over to the April meeting for further discussion with the intention of seeking some advisable action toward the remedying of conditions.

The second discussion had to do with the women's section of the parent association. Mr. Craig, introducing the subject, quoted from letters received from Dr. J. H. Beal, the General Secretary of the Association, and Mrs. J. G. Godding, the Chairman of the section, to show that these officials were at a loss as to what the section was or should be. The general impression of the writers was that the section should afford a means for the formal recognition of women attending the annual conventions, and that its members

should be divided in two classes: women who are pharmacists, and the women relatives of members of the association. It was the opinion of Mr. Craig that to segregate women pharmacists in a separate section would be to deprive them of the privileges of members of the Association and would also entail a distinct loss upon the other sections. He favored an auxiliary for the non-pharmacists, to which women pharmacists might be admitted.

Mr. Diner thought that the interest in pharmacy of the women relatives of pharmacists was sufficient qualification to entitle them to membership in the association proper; and he was in favor of getting them to become members. Prof. Mayer saw no necessity for a separate section, but did consider an auxiliary for the non-pharmacists an advantage. C. A. Mayo favored some organization that would give the non-pharmacists a sense of being a part of the convention.

Miss Lillian Goldblatt declared that the men in pharmacy were too much inclined to look upon the woman pharmacist as a joke. She felt that women pharmacists were not wanted in the organizations where men were now practically alone. In her opinion it would be impossible to interest in one organization women whose interest is in pharmacy and those interested only in pharmacists. This idea was shared by Mr. Roemer. President Bigelow pointed out that the parent association had extended every recognition to women pharmacists.

Miss Charlotte Ransford was inclined to believe in the existence of opposition to women in pharmacy, but she did not believe that feeling prevailed in the American Pharmaceutical Association. Mrs. Gay opined that women pharmacists should participate as regular members and that there should be an auxiliary for the non-pharmacists.

The Branch went on record in favor of calling the new organization an auxiliary rather than a section.

President Bigelow and Mr. Mayo called attention to the pharmaceutical application of the proposed rules and regulations under the weights and measures of law.

The President appointed as the committee on fraternal relations the following: For New York County, Peter Diamond, George Kleinau, J. L. Lascoff, C. H. Lowe and John Scavo; for Kings County, W. C. Anderson,

Otto Raubenheimer, T. D. McElhenie, Alexander Gardner and W. T. Creagan; for Westchester County, John Roemer, Samuel Schoenfeld, and W. H. Smith; and for Richmond County, C. N. Lehman, and F. W. Kerr.

HUGH CRAIG, Secretary.



DENVER BRANCH.

The January meeting of the Denver Branch was held Tuesday evening, January 21st, at the Brown Palace Hotel, a large number of members and several visitors being present, amongst whom were Senator Reynolds of Greeley and Prof. Washburn of Boulder.

After a very enjoyable dinner, President Best called the meeting to order and called on the Secretary for the minutes of the December meeting, which were read and approved. Hereupon the Treasurer presented the following report, covering from October, 1911, to date:

Receipts.

Cash on hand Oct. 31, 1911....	\$16 70
Branch dues (from 21 members) ..	21 00
Branch dinner (\$1 per plate) ..	26 00
Mr. Boutwell.....	1 00
National Treasurer for members obtained through Branch ..	49 00
	—————\$113 70

Disbursements.

Postage	\$15 21
Stationery and printing.....	10 25
Flowers	5 00
Dinners given by the Branch....	53 00
	————— 83 76

Cash on hand Jan 21, 1913....	\$29 94
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There are two unpaid bills, one tonight's dinner and the other the printing of notices for this meeting. These are more than offset by the local dues for 1913, which are now due but none of which have been collected so far.

It was moved the Treasurer's report be adopted and the motion was seconded and carried.

The Secretary then read several letters received since the last meeting.

The election of officers being in order, Mr. Ford moved that President Best be instructed to cast the ballot for the officers nominated at the December meeting. The motion was seconded and carried, whereupon President

Best cast the ballot declaring the following elected:

President—Mr. W. A. Hover.

First Vice President—Mr. C. H. Skinner.

Second Vice President—Mr. F. J. Lord.

Secretary-Treasurer—F. W. Nitardy.

He introduced the new President to the Branch and Mr. Hover responded with a fine speech of acceptance, touching on the great work of the A. Ph. A. and reasons for his deep interest in the Association, concluding by thanking the members for the honor conferred upon him.

President Hover then called on Prof. Washburn of Boulder, who responded as follows:

It was with pleasure that I received your kind invitation to attend this banquet and speak on the subject of "How Much of the Four Years' Experience Required by the State Law, Before One May Become a Registered Pharmacist, Should be Allowed for Graduation from a School or College of Pharmacy?"

I had a pretty definite idea on this subject before I began to prepare this speech, but the more I study the subject, the more indefinite that idea becomes. Like the professions of law and medicine, the first instruction in the art of pharmacy was imparted and transmitted solely by the apprentice system. Then, as in those professions, schools were established to ground the student in the fundamental principles upon which the profession is founded.

Unlike those professions, we still require, in most states, that the college course of instruction shall be supplemented by one or more years of apprenticeship before one may be admitted to practice. I believe it is well that this is the case and I believe it would be equally advantageous if similar requirements were exacted of the other professions.

In the discussion of the question at hand, three things must be considered. First, the public welfare and safety must be conserved. This I regard as the most important of the three. Second, a square deal must be given to those fitting themselves to enter the profession, whether it be by the school-of-pharmacy or the apprenticeship route. Third, higher education must be encouraged, for it is to this alone that we must look for any advancement in the science and art of pharmacy.

But to say just what is the equivalent, in

practical experience, of a course of instruction in a school or college of pharmacy, is by no means an easy task. While the value of a college course must necessarily vary, depending upon many factors, such as the quality of instruction, the equipment of the school and the personnel of the staff of instruction, it is a fact that the methods of instruction and the facilities for doing the work in the recognized schools and colleges of pharmacy are becoming more and more of a uniform standard, due, no doubt, to the work of the American Conference of Pharmaceutical Faculties and of the Syllabus Committee.

While this is a recognized fact, it is also recognized that the value of apprenticeship experience depends upon a number of conditions, which in the very nature of things, it is impossible to control or even to regulate. I can imagine apprenticeship experience under such favorable conditions as to make it of equal if not superior value to any college training, but in how many drug stores do such conditions exist? Even if the proprietor is qualified to give such instruction, the chances are he is either too busy or has not the inclination. Only from those who are regularly engaged in teaching as a profession and who are paid for this service, may we expect any systematized and well-regulated methods of instruction.

Unfortunately the law makes no distinction, nor can it make any distinction, between experience gained in a store where the conditions are favorable for valuable instruction, and one where the instruction either does not exist or may even be positively bad. I have seen applicants registered on experience which was gained entirely behind the soda fountain, and which in my judgment, did not contribute any more toward the making of a capable pharmacist than an equal amount of time spent in a laundry or a lumber yard.

The experience upon which I became registered partook of both of these extremes. In one store the proprietor possessed all the qualifications for imparting instruction, and did so, much to my benefit, but in the other, neither the qualification nor the inclination were present, and the experience was of no more value in fitting me to become a pharmacist than clerking in any other line of retail trade would have done.

In deciding what should be done towards

the solution of this question in Colorado, I believe we may well look about us and see what the other states are doing. Accordingly I addressed two questions to the secretary of each state board, asking, "How much experience is required before one may present himself as a candidate for registration, and how much of this experience requirement is allowed for graduation from a recognized school or college of pharmacy?"

I received answers from forty-four boards, and have attempted to arrange them in groups in such a way, as to show as nearly as possible what the various states are doing towards the solution of this problem. In looking over this list, I find that out of the forty-four boards from which replies to my questions were received, four states require five years' experience, thirty-three require four years' experience, and seven require three years' experience.

Of these, two states allow no experience-credit for work done in a school or college of pharmacy, while on the other hand, five states require no store experience of graduates from recognized schools, and in fourteen other states the full experience requirement may be done, in part or in whole, in a school or college of pharmacy.

Grouping them in still another way, I find that one state requires five years' drug store experience of graduates, another requires four years, two require three years, sixteen require two years, five require one year and five require no store experience, while in the remaining fourteen full time is allowed for work done in college even up to their full experience requirement.

A summary of these figures will show that a large majority of the states require four years' experience. Also that the average store experience required of graduates is two years.

I therefore suggest, Mr. President, that this body recommend to the State Board of Pharmacy of Colorado, that two years of the four required by our state law be allowed for graduation from a recognized school or college of pharmacy.

Professor Washburn's paper precipitated a warm discussion in which Messrs. Hover, McKenzie, Clayton, Bresler, Washburn, Seymour and Ford participated, whereupon Mr. Ford offered a motion that the Branch suggest to the Colorado Board of Pharmacy that two years of credit as experience be allowed

to graduates of recognized schools of pharmacy towards the four years required by law. The motion was seconded and after a further discussion, participated in by Messrs. Best, Bresler, Hensel and Hover, was carried. The discussion then turned to the general education required by the Board of Pharmacy as a prerequisite to examination as well as the entrance requirements of the Pharmacy Department of the State University, Messrs. Washburn, Clayton, Bresler, Hover, Wilson and Boutwell taking part.

Mr. Nitardy suggested that the Branch consider the advisability of recommending to the State Board of Pharmacy the raising of the requirements for full registration and making the assistant certificate of more value by permitting an assistant to assume the management of a pharmacy during the temporary absence of the proprietor or manager, placing a proper definition on "temporary." He believed that such action would do much to elevate the standard of pharmacy in Colorado, as well as place a check on the too indiscriminate springing up of new stores and at the same time help to solve the clerk problem. The subject was discussed at some length, Mr. Hover stating that he thought it an important subject for the Branch to consider and suggesting the discussion be made a subject for the February meeting.

Turpentine was next considered, Mr. Nitardy reporting that several samples of pure turpentine had been declared adulterated by the State Board of Health, based on the report of the state chemist that the turpentine did not comply with the requirements of the U. S. P. as set forth in the Sulphuric Acid test.

Further investigation on part of the state chemist, Mr. Hover and Mr. Nitardy, however, had proven the turpentine to be pure and the Sulphuric Acid test of the U. S. P. faulty. The State Board of Health, recognizing the latter fact, withdrew its first finding. Further proof of the unreliability of the sulphuric acid test of the U. S. P. was derived from Bulletin No. 135 of the Bureau of Chemistry of the Department of Agriculture on "Commercial Turpentines, Their Quality and Methods for Their Examination," pages 17 and 29, and the semi-annual reports of Schimmel & Co., April, 1909, page 90; April, 1910, pages 111 and 112; April, 1912, page 125, and October, 1912, page 108. Findings in this case were such that it was

proven that even the latest tests required further investigation to make them reliable in all cases. The hour being rather late the matter could not be discussed in detail.

A new eight-hour law before the legislature was mentioned and briefly discussed. Mr. McKenzie then moved a vote of thanks to Professor Washburn, whereupon it was moved to adjourn.

President Hoyer invited the Branch to be his guests at dinner at the February meeting, which will be held Tuesday evening, Feb. 18.

F. W. NITARDY, Secretary.



CITY OF WASHINGTON BRANCH.

The regular monthly meeting of the City of Washington Branch was called to order at 8 p. m., February 12, with President Lyman F. Kebler in the chair. In the absence of the Secretary, Dr. Henry E. Kalusowski was called upon to act as such, pro tem.

The President announced that the paper on Commercial Senna Siftings, prepared by Dr. G. W. Hoover, would be, in the absence of that gentleman, presented by Mr. D. K. Chestnut. Mr. Chestnut described the difficulties in obtaining senna siftings, and the result of the experiments undertaken to obtain such siftings comparatively free from ash and other foreign materials; further, the methods of cleaning by which the siftings can be cleaned to a degree that the ash content will not exceed the limit of 14%. Results obtained showed that out of an original bale of 352 pounds net, the ash content was 17.52%. By dividing the contents into nine portions, and following the cleaning process outlined, it was found that the lowest ash content in any portion was 9.48% and the highest only 10.63%. No difficulty was found in removing the sand and very little cost was added to the price of the siftings by the process followed. The discussion which followed indicated that the allowance of 14% ash was considered liberal.

Dr. George A. Menge called attention to the difference in the ash content of the leaves and the siftings, and that it would be possible to powder the leaves with much of the stems without the ash content showing the inferiority. This practice, Mr. Chestnut stated, would be quickly detected by microscopical

examination. In closing the discussion, the necessity for cleaning senna siftings was strongly argued, it being pointed out that the nature and character of the foreign substances made their removal essential.

Dr. Kebler then presented a paper on the variations in the strength of Tincture of Iodine as frequently found in commerce. Specimens examined showed 1.97% and 1.3% Potassium Iodide, while others presented higher percentums. Very few samples came up to the U. S. P. requirements, although several contained more Iodine and Potassium Iodide than necessary. One specimen showed 9.26% Iodine and 5.23% Potassium Iodide. In the discussion which followed, Mr. Hilton stated that with the alcohol of the U. S. P., difficulty was experienced in dissolving the required quantity of potassium iodide, and offered this as an explanation of the inferiority of commercial samples. Mr. Wilbert believed that carelessness was accountable for much of the variation in the samples inspected, while Mr. Flemer called attention to the variable content of alcohol as shown in the samples of Tr. Iodine examined. He referred to the practical impossibility of complying, in every instance, with the requirement that the alcohol strength be stated on the label, and cited instances when it could not be done. The next meeting will be held March 12.

HENRY E. KALUSOWSKI,
Secretary Pro Tem.



PITTSBURGH BRANCH.

The meeting of the Branch, Friday, February 14, was well attended by students of the Pittsburgh College of Pharmacy who are naturally somewhat worried over the possible success of proposed legislation, especially that proposition that threatens the elimination of the qualified assistant, which is one of the prominent features of the P. A. R. D. proposed pharmacy law. The discussion of the Pennsylvania Pharmaceutical Association bill and the substitute for it that Philadelphia proposes, and in what manner they differ, was opened by B. E. Pritchard, who made it very apparent to the young students in what manner their future hinges upon the outcome, and urged upon them the necessity for them to do all in their power to further the success of proper legislation such as

the State Association is working for, and prevent the passage of such a drastic Act of Assembly as that being urged by the P. A. R. D. Mr. Pritchard said you young men might as well drop out of pharmacy now, as the outlook under some of the proposed measures, if successful, is not very auspicious.

Dr. Louis Saalbach also urged upon the students to not only write to members of the House and Senators themselves favoring the P. P. A. bill, but to induce their employers to do likewise in self defense.

Dr. Blumenschein said the success of the P. A. R. D. proposition would be largely a matter of politics, as Philadelphia has more representatives and senators than Allegheny and several other counties combined, hence the druggists can swing more votes for or against any measure.

The policy of the P. A. R. D., he thinks, is to so cloud the atmosphere as to preclude the possibility of securing any legislation affecting pharmacy, which seems to be their desire at this time. Said Dr. Blumenschein, should the qualified assistant be legislated off the map, a considerable number of small drug store proprietors will have to eat their meals from the prescription counter, that is provided they can afford to pay for meals at all under the conditions.

Dr. Blumenschein directed attention to H. R. Bill No. 277, also known as the Alter Bill, which is directed against fraudulent advertising, and which, if successful, will do much toward eliminating the patent medicine evil and the advertising medical fakers of the day. A resolution was adopted endorsing this measure. He also commended the Hughes-Bacon bill now in the care of the Military Affairs Committee at Washington, the object of which is to secure higher rank and better pay for the army pharmacists.

Dr. J. H. Wurdack gave a very valuable talk on the nature of various rocks, and exhibited a large number of specimens of various kinds containing precious metals. A feature of his lecture was the submission of formulae used in the producing of factitious gems, many of which he said are of greater beauty than the genuine stones and cannot be detected even by experts. To such an extent is this true that money lenders refuse to accept gems of that class as security for loans.

B. E. PRITCHARD, Secretary.

PHILADELPHIA BRANCH.

The regular monthly meeting of the Philadelphia Branch of the American Pharmaceutical Association was held February 4 at the Engineers' Club, President F. E. Stewart presiding. Upon opening the meeting the President announced the death on the 1st inst. of Treasurer William McIntyre, and suggested that the fore part of the evening be devoted to a memorial meeting, and then after an adjournment for five minutes the remainder of the evening could be spent in discussing the program mapped out by the officers.

Prof. Kimberly moved the appointment of a committee to draw up suitable resolutions to be sent to the family of Mr. McIntyre and to be recorded in the minutes of the Branch. The motion prevailing, the President appointed Messrs. E. M. Boring, F. M. Apple and W. L. Cliffe.

President Stewart read a note from Dr. C. B. Lowe expressing regret at being unable to be present to voice the esteem in which he held the departed brother, William McIntyre. He sent this tribute: "He was a man of sterling integrity, excellent judgment, an earnest worker along educational lines, and always deeply interested in matters pharmaceutical. His life should inspire every pharmacist, not to live for the mere accumulation of wealth, but to take an interest in the higher and better things of life which make for our brother's welfare."

The meeting being declared open for further remarks, a number of others availed themselves of the opportunity.

Mr. Cliffe said that during a number of years while he and Mr. McIntyre were business neighbors he had held him in high esteem for his high standard of manly character. To him "Mr. McIntyre always presented the aspects of a man faithful to the interests and welfare of his fellowman."

Prof. Cook, referring to the great work Mr. McIntyre had done in public education, said, "He was the intimate friend of all the school children in his neighborhood." He spoke also of the eagerness with which Mr. McIntyre greeted the advent of any new appliance intended to improve pharmaceutical processes.

Mr. Apple, speaking of various conversations held with Mr. McIntyre on the way home from Branch meetings, said that they

dealt nearly altogether with his school interests. He expressed the idea that, perhaps, Mr. McIntyre's enthusiasm for his school work, in a measure, hastened his death, he having over-exerted himself a year or so ago while working on one of the school-grounds in which he was particularly interested.

Prof. Kraemer said that to him "Mr. McIntyre seemed like the sun,—giving life and light eternal." Referring to his cheerful disposition under all sorts of circumstances, he said "He seemed like a plant,—transforming sunlight, as the rose, giving joy and pleasure to those about him."

Mr. Gordon recalled that Mr. McIntyre was the first President of the Philadelphia Association of Retail Druggists, and that it was only his tact and patience that brought order out of chaos of conflicting opinions on the part of members that threatened to disrupt the new organization.

Mr. Beringer, referring to the regularity and faithfulness with which Mr. McIntyre attended the meetings of the Branch and of the parent Association, said "The American Pharmaceutical Association has lost a most ardent worker whose place will be hard to fill."

Prof. Pearson felt that "Mr. McIntyre's life was an inspiration and worthy of emulation."

F. P. STROUP,

Secretary Pro Tem.



CINCINNATI BRANCH.

ORGANIZATION MEETING.

A meeting was held at the Lloyd Library on Court Street, Wednesday evening, February 12th, for the purpose of petitioning the Council of the A. Ph. A. to grant permission to form a Branch, to be known as the Cincinnati Branch of the American Pharmaceutical Association.

By virtue of his office as Chairman of Committee on Local Branches, Mr. Theo. D. Wetterstrom acted as presiding officer, while Charles A. Apmeyer was chosen temporary Secretary.

Prof. James H. Beal was the first speaker of the evening and his address, setting forth the many advantages to be derived through the establishment of a Local Branch, was well received. Prof. John Uri Lloyd, in his usual happy style, gave a masterly talk on

the "Progress of Pharmacy" at the same time tendering the "Lloyd Library" as a meeting place for the new Branch. He was heartily greeted by all members present. Mr. Theo. D. Wetterstrom presented some original work on "Veratrum," exhibiting a number of fluidextracts and other preparations prepared from different samples of the drug, which brought about a very interesting and instructive discussion of the subject.

The chair appointed the following committees:

Organization—C. T. P. Fennel, Frank H. Freericks and Charles G. Merrell.

Nomination—Edw. Voss, Jr., William L. B. Brittain and Fred S. Kotte.

Program—Charles A. Apmeyer, F. W. Weissmann, Julius Greyer and Dr. A. O. Zwick.

The date of the next meeting was set for March 18th, and it is expected to be an enthusiastic one. The Committee on Program has in view a number of interesting events to be presented at the next few meetings.

CHARLES A. APMEYER,

Temporary Secretary.



SAINT LOUIS BRANCH.

A regular meeting of the Saint Louis Branch of the American Pharmaceutical Association was held in the Saint Louis College of Pharmacy on Friday evening, January 17, with President Ihardt presiding.

The minutes of the December meeting were read and approved.

The Chair then stated that the minutes of the first annual meeting held on October 22, 1912, and reported by Mr. J. A. Wilkerson, had not been presented. On supported motion, the minutes of that meeting were read and with one minor correction were approved.

The Secretary then stated that Mr. Ihardt had handed him a typewritten copy of the Ihardt-Smith paper, "A Quick Process for Preparing Solution of Citrate of Magnesium," as presented orally at the December meeting. On motion, seconded, and carried, the paper was received and ordered filed.

The Secretary read a letter from Doctor James H. Beal, General Secretary of the American Pharmaceutical Association, appealing to the members of the Branch to discuss the subject of an Association Home,

and to enter the Model Constitution and By-laws and the Model Program prize competition contests.

President Ihardt then announced the names of the members constituting the committees and the Advisory Board of the Branch for current year as follows:

Legislation—H. O. A. Huegel, L. G. Blakeslee, F. W. Sultan.

Membership—W. P. Overstreet, F. G. Uhlich, O. C. Han-er.

Publicity—G. R. Merrell, W. A. Hickey, G. W. Collins.

Papers—Francis Hemm, J. P. Schoenthaler, Dr. R. E. Schluter.

Manufacture—H. S. Merrell, Jr., Dr. C. E. Caspari, Ambrose Mueller.

Discussion—Leo Suppan, F. A. Haines, E. A. Semmewald.

Memorial—Dr. J. C. Falk, G. S. Lohmann, Mrs. P. G. Huffman.

Advisory Board—William Mittelbach, I. B. Miller, Adolph Brandenberger.

The program was then taken up and the Chair called upon Professor J. M. Good who read the article entitled "Protected Medicines and the Pharmacopœia" appearing on page 1327 of the December number of the *Journal of the American Pharmaceutical Association*. In discussing the paper Professor Good said in substance, that preparations intended for medicinal use and controlled by proprietary interests, should not be admitted into the United States Pharmacopœia; that preparations, the composition and method of manufacture of which are known to the producers only, likewise should be excluded from official recognition; that the unpopularity of proprietary concerns has been brought about by themselves due largely to their attitude toward the retail druggists in exacting of them exorbitant prices for their goods above the actual cost of production. He further stated that it is reasonable for us to expect them to protect their interests, but not to make misleading statements nor to misrepresent their products in order to create a market for them. He criticised severely certain foreign manufacturers of synthetics for the beguiling means resorted to in order to force their products upon the shelves of the retail druggists.

Professor Good spoke in complimentary terms of the good work the American Medical Association, Research Department, has done and is doing to stop these impostors

from preying upon the public by exposing them and by publishing their fraudulent and deceitful methods in the *Journal of the American Medical Association*.

Professor Hemm concurred in Professor Good's statements and spoke further on the moral side of the subject. He said it is morally wrong for a conscientious pharmacist to allow or encourage extortion on his patrons' prescriptions and that we should protest against it and combat it as far as lies in our power. The dispensing of proprietary remedies, with protection of trade name or process of production, commanding extortionate prices, we are obliged to admit we cannot control and for that reason we should refuse them our endorsement. Physicians who permit themselves to be influenced by soulless concerns into prescribing their products of which in many cases the composition is even unknown to them are blameable for the success of many high-priced items and cause many poor patients to foot the tax, levied by our peculiar patent laws.

Professor Suppan then took the floor and fully agreed with Professor Good, in that, preparations intended for medicinal use, controlled by proprietary rights, and those, the composition and method of manufacture of which are trade secrets, should be excluded from the United States Pharmacopœia, but stated that there is, however, a class of preparations of which both the composition and the method of manufacture are known; they are produced principally in Germany and constitute the so-called "synthetics," dozens of which are placed upon the market every year; that they are subjected to physiological and pathological tests by disinterested investigators, and among them are a number which undoubtedly will find a permanent place in the materia medica. If they survive the period of patent protection in the United States (seventeen years), they have proved their efficacy and are worthy of recognition in our national book of drug standards. Continuing, he said that any proposal or suggestions on the part of the Committee on Revision of the United States Pharmacopœia to admit patent or trade-mark protected medications would result in the formation of a "lobby" of manufacturers, eager to have their products recognized, and they undoubtedly would bring some pressure to bear upon the members of the Committee in order to secure such recognition. On the other hand,

druggists of the United States entertain a strong prejudice against the German manufacturers of synthetics on account of the prices demanded by the latter for their products; that these manufacturers are not to blame for this, for it is a maxim in political economy that every producer and dealer seeks to purchase his crude material in the cheapest market and to sell the product derived therefrom in the dearest market. The cause of the high cost of synthetics is to be found in our patent laws, which grant a patent upon a product of a chemical nature as well as upon the process employed in manufacturing it, and the only relief can be found in amending our patent laws. Further, the prejudice against foreign-made synthetics, based upon just commercial grounds, is extended so far as to lead some druggists to offer resolutions at meetings of pharmaceutical associations condemning the employment by physicians and the laity of such substances altogether. This attitude is, of course, silly, but is apt to gain grounds.

Others who took part in the discussion were Messrs. C. T. Buchler, A. C. Schulte, Louis Lieberstein, J. A. Wilkerson, W. K. Ihardt and J. C. Hoster. A vote of thanks was extended the speakers of the evening, and on motion, duly seconded, the meeting adjourned. J. W. MACKELDEN, Secretary.



NASHVILLE BRANCH.

The Nashville Branch of the American Pharmaceutical Association met in Furman Hall Thursday, February 20th, with Dr. J. O. Burge presiding.

After the approval of the minutes of the previous meeting, a communication was read from Prof. A. H. Clark, Chairman of the National Membership Committee, approving the plans of the local committee to begin a general campaign of the Southern States for membership. A beautiful badge of unique design, showing Andrew Jackson's monument at the capitol in relief, was proposed for the members attending and referred to the proper committee.

Reports from the transportation committee showed efforts are being made to get the proper rates from the passenger associations. A full discussion of the plans for the entertainment of the convention here in August was indulged in by all present.

Dr. G. W. Hubbard, a new member of the

Branch, was present and made many very helpful suggestions along this line.

The subject of State legislation was taken up and a committee consisting of Dr. E. A. Ruddiman, Wm. R. White, J. O. Burge, Dr. G. W. Hubbard, L. J. Pulley and C. C. Young was appointed to appear before the State senate committee on behalf of the repeal of the law allowing physicians to register as pharmacists without examination.

WM. R. WHITE, Secretary.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



OSCAR OLDBERG, PHARM. D., LL. D.

JANUARY 22, 1846—FEBRUARY 27, 1913.

With the death of Oscar Oldberg one of the beacon lights of the pharmaceutical world is extinguished; a light that has beamed so long and so steadily that it will seem as if a guiding star has sunk below the horizon. A guiding star he has been for the past thirty years, one that assured us that lofty ideals were not dead.

Born of a family of ministers of the Gospel, true pastors of a simple God-fearing people, he inherited the true nobility of character that kept him unwavering in the path of progress, with a firm belief that "right makes might" in all things on earth or beyond. Once a certain source of action became to him a conviction, no circumstances, no sophistications could shake him from pursuing that course and teaching the tenets of his faith. His pharmaceutical faith came to him by way of the father of modern chemistry, the great Berzelius. When young Oscar, son of Pastor Oldberg, in Helsingland, Sweden, left the public schools and the Gymnasium of Getla, to follow his chosen calling, it was to enter the office of one Frederick W. Helleday of the town of Falun. Helleday was a pupil of Berzelius and during the four years of customary apprenticeship, Oldberg had the benefit of the schooling, experi-

ence, and kindly offices of a private tutor in his master. In all his teaching in later years Dr. Oldberg repaid that debt by bringing to all those who came under his influence as a teacher, the best traditions of master and apprentice, as well as teacher and pupil.

When, in 1865, Oscar Oldberg, as a mature and experienced pharmacist, decided to make the new world his home, we find he adapted himself so well to the new conditions and surroundings that four years after his arrival he was appointed a member of the faculty of the School of Pharmacy of Georgetown and his career as a teacher continued with scarcely an interruption until his retire-



OSCAR OLDBERG.

ment. Teaching was his true vocation and whatever the subject he may have chosen for his life work his position would have been that of instructor. His energies would not allow him to confine himself to one line of work, however, and so we find him at one time representing his home country as vice-consul, at another he took care of an exhibition of chemicals and pharmaceuticals that was sent from this country to London; at another period he, in conjunction with Dr. Wall of St. Louis, manufactured chemicals and pharmaceutical preparations.

Four years he served the country of his adoption in the capacity of chief clerk and medical purveyor in the Marine Hospital Service at Washington, here he did much to systematize the purchase and preparation of the medical supplies in that important branch of the Government service.

However, teaching was his true calling and other occupations gradually passed to the background. While in Washington he held the chair of Pharmacy and was Dean of the Faculty in the National College of Pharmacy and that institution conferred upon him the degree of Doctor of Pharmacy Honoris Causa.

He was called to Chicago to accept the professorship of Pharmacy in the Chicago College of Pharmacy in 1883, and was Dean of that institution until Northwestern University established a School of Pharmacy, to which he transferred his efforts and remained Dean of Northwestern University School of Pharmacy for a quarter of a century, until failing health compelled him to give up active service in the school.

On the occasion of the celebration of the twenty-fifth anniversary of the founding of the School of Pharmacy, Northwestern University conferred upon him the honorary degree of Doctor of Laws and subsequently awarded him a pension for the remainder of his life.

His life might have been prolonged many years had he been sparing of his energy, but he was a spendthrift of his strength, devoting his time without rest or vacation to his beloved work of improving pharmaceutical education.

To his pupils he ever preached as gospel "Go Out Into the World and Improve the Calling of Pharmacy." To pharmaceutical faculties and to state authorities he extended his wise counsel. For thirty years he served on the Revision Committee of the United States Pharmacopoeia, and many changes and revisions were due to his untiring work, especially on the subjects of weights and measures and pharmaceutical nomenclature. He was ever active in the affairs of the American Pharmaceutical Association and served it in many capacities. He was its President in the year 1908-1909.

Coming from a country where the pharmacists were surrounded by all the privileges and benefits of a state-calling, he tried to give to American Pharmacy the benefit of

Europe's experience, although he fully realized that what best served the people when administered by a strong centralized government required many changes and qualifications before it could be applied to a young and vigorous democracy, where personal (sometimes rebellious) freedom is more valued than a kindly rigid paternalism.

Doctor Oldberg's teaching assumed broader scope than that of a classroom pedagogue. He was a teacher of teachers. His contributions to the current pharmaceutical literature were constant and always to the point. They helped to form public opinion on many questions regarding pharmaceutical legislation and education. He insisted on proper educational qualifications for those entering upon pharmaceutical work. A suitable preliminary education he fought for at all times and his pen was as effective as his vision was clear. "Without a Foundation How Can We Build"? He would ask this question and its unanswerable logic told. He did not lay undue stress on school honors or degrees but the substance, the mental training, he insisted upon.

The sophistry, "Give the poor boy an equal chance" with his more fortunate neighbor, never blinded him; he would answer, "If the boy is poor so much more the reason you should not mislead him." He had been a poor boy, he was a friend to the poor boy. He wrote a text for home study not to take the place of schooling, but the better to prepare the poor boy for such schooling, and his "Home Study" was the most widely known of all his writings. His books were numerous and served thousands of students in schools and out for their guidance in pharmaceutical matters. His latest work which he designed to contain the essence of all his teachings was finished under the greatest difficulty after his health had broken under the years of toil, when every effort was a source of pain.

He was never idle and for years he maintained a correspondence of no mean proportion with all who were interested in pharmaceutical matters. That interest he fostered and cultivated assiduously. His pupils found him a loyal friend, after they had gone out into the world, to whom they might turn at any juncture in their lives when in need of aid and advice.

His handiwork will be found in state legislation and in educational institutions for many years to come for he taught men to

pass rational examinations and at the same time helped the authorities to frame tests, and examination questions along rational lines.

His work was finished some time before Providence removed him from our midst. He had gone to California to enjoy the restorative sunshine, but he went too late. Although the body lingered, the spirit was fleeing and finally departed from this world February 27, 1913. GEO. D. OGLESBY.

RESOLUTION BY THE FACULTY, NORTHWESTERN
SCHOOL OF PHARMACY.

March 1, 1913. At a meeting of the faculty called for the purpose of taking action upon the death of Dean Oldberg the following resolution was passed:

WHEREAS, By the death of our beloved Dean, Oscar Oldberg, the School of Pharmacy of Northwestern University has lost a peerless leader, a wise counselor and a true friend, whose guidance has been an inspiration alike to teacher and pupil during a long period of active service. Therefore, by this faculty, be it

Resolved, That we hereby acknowledge the inestimable value of his services to this School and the Pharmaceutical Profession. In his self-sacrificing efforts to achieve the things which his clear vision perceived to be for the good of his profession: In encouraging students to a better endeavor and higher ideals by his untiring zeal and devotion: And in his pioneer work of fostering higher pharmaceutical education and promoting legislation upon matters pertaining to Pharmacy. And it is hereby ordered by this faculty that this resolution be spread upon the records of the School and a copy suitably engrossed be sent to his family.

Respectfully submitted,

GEORGE D. OGLESBY,

M. A. MINER,

Committee.

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EWEN McINTYRE.

By WILLIAM C. ALPERS.

The death of Ewen McIntyre, on the eighth day of January, in his eighty-eighth year, removed one of the most remarkable and best known members from the ranks of American pharmacy. A man of the greatest and sweetest modesty in all his doings and words, reluctant to come forward, he was yet a towering figure and a national character among his fellow workers. He was a class by himself. For while he ranked with the old and was a living representative of pharmacy as practiced fifty years or more

ago, he was yet among the young and there was no vital question of the present time that he did not embrace with the full vigor of a progressive and active mind. Even his body seemed to have preserved this youthful freshness; the alacrity, the ease of movement, the ability of enduring fatigue, the fire of his little piercing eyes, stamped him as a man in the prime of life and only the silver threads of his long flowing hair betokened his age.

Ewen McIntyre was born in 1825 at Johnstown, Fulton County, N. Y., of Scotch par-



EWEN MCINTYRE.

ents. His childhood was spent on the farm of his father, where he remained till his seventeenth year, when he started for New York to hunt for work. It was his good fortune to enter the pharmacy of Dr. George D. Coggeshall, at Pearl and Rose streets, at that time a fashionable part of New York. He was here imbued with the true spirit of pharmacy that remained with him during his whole life. Mr. Coggeshall, a man of broad knowledge and liberal education, one of the founders of the American Pharmaceutical Association, took a deep interest in the bright country lad and started him on a

career of success and honor. For seven years young McIntyre remained in his first position, taking at the same time a course in the New York College of Pharmacy, and graduating in 1847. Two years later he had saved enough to open his own pharmacy at Broadway and Eighteenth street. This neighborhood was almost rural at that time and McIntyre used to tell in later years how his friends tried to dissuade him from what they called a foolish enterprise. There was always a shrewd twinkle in his eyes whenever he spoke of his early business enterprise, but that was the only sign of his inner satisfaction for having so correctly foreseen the development of the city and by his selection laid the foundation of his future wealth. Soon after establishing himself a dispute arose with his landlord, but McIntyre quickly bought the vacant lot at the southeast corner of the two streets, where he erected a modest house and conducted his pharmacy till 1896, when he retired. The old house has since made place to a large modern business structure and netted the owner a considerable profit. In his enterprises Ewen McIntyre differed in one respect from most of his fellow pharmacists, in that he was successful and was able to withdraw from business in the possession of a healthy body and healthier mind. It is true he owed his success not alone to pharmacy, but to wise and profitable investments in real estate, taking advantage of the gradual enlargement of New York which he saw growing from a city of 200,000 to four millions of inhabitants. But this very shrewdness in discovering and grasping the opportunities that arose around him, distinguished him from most of his co-workers, who, absorbed in the daily routine of their arduous duties, fail to look beyond the walls of their business. And this correct judgment and quickness of perception characterized him to the day of his death and made him the safest and most reliable adviser in all the various enterprises with which his active mind was engaged.

This valuable gift of his mind he employed during the last twenty years of his life almost exclusively in the interest of his profession, and particularly in his pet enterprise, the College of Pharmacy of the City of New York. It is questionable if any other man can be found who gave better and nobler service than McIntyre. A student in

1846 at the age of 21, and a graduate in 1847, he was at his death the oldest living graduate of the school. During the twenty-five following years, the time of his successful work for a competency, he kept in constant touch with his Alma Mater, but refused to accept any office on account of the great amount of private business. In 1873 he yielded to the desires of his friends and became a trustee of the College; in the following year he was elected Vice President, and served as such from 1875 to 1876. The following twelve years (1877-1889) he was President of the College and guided its affairs with skill and success through the critical time of reconstruction. From 1890 to 1893 he was again a member of the Board of Trustees, and since then he has been elected annually Honorary President, which office he held at the time of his death.

A man who filled such exalted and honorable positions in one of the leading schools of pharmacy for so many years naturally was more than a mere ornament or dignified office-holder. He recognized the importance of the pharmaceutical education and saw his duty in devoting nearly his whole time to its elevation. Nor was this all. When it became necessary to pay off part of the heavy mortgage covering the College building, in order to reduce expenses, it was McIntyre who volunteered to do this work. Contributing himself a large amount, he went practically to every pharmacist in New York City and vicinity, pleading and arguing for assistance. No disappointment could deter him, no sneering words check his determination. With youthful enthusiasm and stern perseverance he went from door to door and raised through his own efforts the enormous sum of \$30,000. Anyone acquainted with the closeness of the New York druggists can imagine what an amount of steady and persevering work it meant.

The American Pharmaceutical Association also lost a dear and valuable member in Ewen McIntyre. While he did not become a member till he was 48 years of age, in 1873, he always considered himself one of the founders of the Association, or at least one of those who gave the first instigation to its foundation. It was he who discovered, in 1850, soon after he had started in business for himself, that a quantity of Calcium Carbonate imported from England was largely adulterated with plaster of paris, and in a

meeting of the New York druggists, he called attention to this adulteration. Other similar complaints were made and the desire of bringing these fraudulent importations to the notice of the federal government and finding means of checking them, led to the formation of the American Pharmaceutical Association.

In the last ten years of his life, Mr. McIntyre became a familiar figure in the meetings of the Association and his influence, although wielded in his usual modest and quiet way, was of no mean importance. His wonderful memory with its inexhaustible treasure of youthful recollections, became a source of recreation and pleasure to a large circle of friends, who always surrounded him and listened to his words. As Chairman of the historical section in 1906-7 he did splendid service and contributed a large fund of knowledge and reminiscences to the records of the Association. His efforts and services were further honored by his election as Honorary President in 1910.

The two Nestors of American Pharmacy—Ramsperger and McIntyre—followed each other quickly and left vacant places, hard to fill. Both were typical men. The one represented the old scientific German "Apotheker," full of knowledge and idealism; the other was a true example of wise and shrewd pharmaceutical enterprise without ever forgetting that stern honesty and higher aims are at the bottom of all success. They were intimate friends, and only a little more than a year ago, both sat together at the festive board, joking and laughing, and calling their neighbors, men of more than fifty years of age, mere boys. Whosoever had the privilege of gaining an insight into their hearts, knows the purity of their motives, the honesty of their thoughts and words, the broadness of their minds and the sincere and unselfish devotion to the cause of pharmacy.

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THOMAS PENROSE COOK.*

1849-1913.

Thomas Penrose Cook was called from his earthly labors on January 7, 1913. His membership in the American Pharmaceutical Association dates from 1878. From this time until the day of his death, a period of thirty

*Expression of appreciation by the A. Ph. A. committee.

five years, his labors were continuous; he served on many committees and was elected Chairman of the Committee on Exhibitions and was local Secretary in New York City in 1907. His extensive acquaintance among wholesale and retail druggists gave him a large influence in Association work, and he had the great faculty of inspiring confidence in every association of which he was a member, for both officers and members instinctively felt that if Thomas Penrose Cook was entrusted with a duty it would be most thoroughly performed. He never tired of working for his fellows in every walk of life; sensitive, modest, enterprising and not "slothful in business," he had the rare faculty of retaining as personal friends and well-wishers those who in their business relations were compelled to oppose him. Thomas Penrose Cook was large-hearted and generous in the treatment of those with whom he had business relations as an employer, he was always ready to speak of others in the best terms that he could, and he did not do this as a policy; but was naturally kindly disposed towards everybody. His capacity for detail was extraordinary; this was exhibited in business, in association work, and in social affairs. He has been called home, but the members of the American Pharmaceutical Association will not soon forget the genial smile and the warm hand-clasp of our deceased friend; the recollection of his unselfish services will never cease.

Signed: JOSEPH P. REMINGTON.
WM. JAY SCHIEFFELIN.
C. F. CHANDLER.

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WILLIAM MCINTYRE.

William McIntyre, Treasurer of the Philadelphia Branch of the American Pharmaceutical Association was stricken with apoplexy while tramping with the members of the Wanderlust Society on Saturday, February 1, 1913. He died in the Presbyterian Hospital.

Mr. McIntyre was an unusual personality. Born in Ireland in 1843, his parents brought him to this country in his infancy. He received his early education in the public schools of Philadelphia, after which he entered the employ of John Bly, a druggist of Frankford, Philadelphia, and then enrolled

at the Philadelphia College of Pharmacy, graduating in 1863.

He opened a drug store in the early sixties, at Frankford Avenue and Thompson Street, Philadelphia, and later, at Frankford Avenue and Adam Street, where he remained about thirty-seven years; he retired from business six years ago.

Mr. McIntyre took a deep interest in his Alma Mater, becoming a member of the Philadelphia College of Pharmacy in 1869, serving as a member of the Board of Trustees from 1872 to 1886, acting as Registrar of



WILLIAM MCINTYRE.

the Pharmaceutical meetings and aiding in every way the growth and development of the college. In 1908, the Philadelphia College of Pharmacy conferred upon him the degree of Master in Pharmacy, honoris causa. He was an active member of numerous pharmaceutical organizations. He was a member of the Pennsylvania Pharmaceutical Association, the first President of the Philadelphia Association of Retail Druggists, and a member of the American Pharmaceutical Association since 1868.

He was actively identified with the man-

agement of the Philadelphia public schools. He became a director of the old Thirty-first Sectional School Board in the seventies, and for fifteen years held the position of school controller in the Thirty-first Ward. Since that time Mr. McIntyre was appointed a member of each of the four Boards of Education of Philadelphia. He was a member of the Committee on Elementary Schools, and other most important committees, and his practical business judgment was of much value in securing well-balanced school work. He was known to hundreds of school children, his genial temperament and kindness making friends of them all. As Chairman of the special schools committee, he worked to promote special kinds of training, such as cooking, sewing, manual training, and other branches that in bygone years were unknown in public education. He was much interested in establishing gardens in various school grounds throughout the city, and was an earnest and persistent advocate of physical training and recreation for school children.

Mr. McIntyre was a member of Kensington Lodge No. 211, F. and A. M., Kensington Royal Arch Chapter, No. 233, F. and A. M. He is survived by a widow, Mrs. Jennie McIntyre, and two daughters, Mrs. William Bayne, and Mrs. William Pedrick.

Personally, Mr. McIntyre was genial, warm-hearted and lovable. He left his "footprints in the sands of time," in his devoted work for local pharmaceutical and public school interests, and we can say of him, in the words of Fitz Greene Halleck:

"Green be the turf above thee,
Friend of my better days,
None knew thee, but to love thee,
None named thee, but to praise."

J. W. E.

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JOHN E. HITCHCOCK.

John E. Hitchcock, of Plattsburgh, N. Y., died on February 17, 1913. He was born in Chiektawaga, N. Y., on September 13, 1864, and was the son of Henry C. and Ruth J. Hitchcock. In 1874 his family removed to Harrisville, N. Y.

He attended the public schools and later matriculated in pharmacy in the University of Michigan, from which he was graduated

in 1891. He then took a position in Plattsburgh and in 1904 went into business for himself in which he was eminently successful, his store being one of the best known in Northern New York. Mr. Hitchcock was much interested in raising the standard of pharmaceutical practice and labored zealously toward this end. He was an active member of the New York State Pharmaceutical Association, and joined the American Pharmaceutical Association in 1892.

Personally, Mr. Hitchcock was a man of the highest probity and Christian character. He was a member of the First Presbyterian Church of Plattsburgh and deeply interested in the work of the Y. M. C. A. He was a Mason of prominence, being a member of Plattsburgh Lodge No. 828, F. and A. M., Plattsburgh Chapter No. 39, R. A. M., and DeSoto Commandery No. 49, K. T.

Mr. Hitchcock was never married and leaves two brothers, Arthur K., now in the U. S. Government service in the Philippines, and Harry C., a pharmacist of White Plains, N. Y.

J. W. E.

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LEVI TOWER.

Levi Tower, an old-time druggist of Boston, died at Cobasset, Mass., January 31, 1913, in his seventy-seventh year. He was born in Cohasset where he received his early education.

He entered the employ of J. T. Brown & Co., Boston, at that time one of the leading pharmacists, located at corner of Washington and Bedford Streets. Later he established himself in business at the corner of Washington and Worcester Streets. In 1879 he opened a pharmacy in the Back Bay District, corner Boylston and Clarendon Streets, and five years later established, with John G. Godding, the firm of J. G. Godding & Co., retiring from business in 1899.

He was a member of the American Pharmaceutical Association from 1860 to 1892, when he resigned. He was a life member of the Massachusetts College of Pharmacy.

Mr. Tower did not take an active part in pharmaceutical affairs, but lent his support to all organizations that advanced the interests of his profession.

He was a man of sterling character; keen

and far-sighted in business, kindly of disposition, and modest and retiring.

He leaves a son, daughter and two grandchildren.
J. W. E.

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II. EDWARD WENDEL.

II. Edward Wendel was born in Philadelphia in 1844 and died January 16, 1912. He obtained his education in the public schools, and then matriculated in the Philadelphia College of Pharmacy, graduating with the class of 1865. The subject of his thesis was "Sambucus Canadensis." Later he engaged in drug business at the S. E. corner of Third and George Streets, Philadelphia, where he remained for about thirty-five years. He was one of the old school pharmacists and took a deep pride in the profession of pharmacy, and the drug-products he made. He was an active Mason, being a member of Richard Vaux Lodge No. 384, F. and A. M., Kensington Chapter No. 233, R. A. M., Mary Commandery, K. T., and Philadelphia Consistory, A. A. S. R. He leaves a widow and three daughters.
J. W. E.

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J. C. ARTHUR ST. JAMES.

J. C. Arthur St. James died at Telluride, Colorado, on January 9, 1913. He was a graduate of the N. Y. C. P., 1903, and winner of the Trustees' prize for Materia Medica and Pharmacognosy.

His early practical training was received in the pharmacies of Thomas Latham and Henry Burmeister, of New York City. Going to Colorado about ten years ago in search of health, he located at St. Mary's Hospital, Pueblo, and afterwards held clerkships at Leadville, Breckenridge and Telluride.

He was later about two years in business for himself at Fort Morgan. His death marked a double tragedy—his bride of a week or two preceding him by two days, both victims of pneumonia.

Mr. St. James was the personification of high ambitions, energy, and deep earnestness of purpose, coupled with talents of unusual brilliancy.

He was born in Scotstown, Province of Quebec, Canada, and passed away before completing his thirtieth year.

Many friends mourn his loss, both in Colorado and the East.

THOS. LATHAM.

Council Business

COUNCIL LETTER No. 10.

PHILADELPHIA, February 20, 1913.

To the Members of the Council:

Motion No. 12 (Change of Rule of Finance for Auditing Books), No. 13 (Prices of Bound Volumes of Proceedings), No. 14 (Appropriation for Delegates to National Legislative Conference), No. 15 (Election of Members; Applications Nos. 40 to 59 inclusive), and No. 16 (Change of Date of Annual Meeting to week beginning August 18, 1913), have each received a majority of affirmative votes.

The following communication has been received from the Committee on Resolutions on the late Thomas P. Cook:

"THOMAS PENROSE COOK.

"1849-1913.

"Thomas Penrose Cook was called from his earthly labors on January 7, 1913. His membership in the American Pharmaceutical Association dates from 1878. From this time until the day of his death, a period of thirty-five years, his labors were continuous; he served on many committees and was elected Chairman of the Committee on Exhibitions and was local secretary in New York City in 1907. His extensive acquaintance among wholesale and retail druggists gave him a large influence in Association work, and he had the great faculty of inspiring confidence in every association of which he was a member, for both officers and members instinctively felt that if Thomas Penrose Cook was entrusted with a duty it would be most thoroughly performed. He never tired of working for his fellows in every walk of life, sensitive, modest, enterprising and not "slothful in business," he had the rare faculty of retaining as personal friends and well-wishers those who in their business relations were compelled to oppose him. Thomas Penrose Cook was large-hearted and generous in the treatment of those with whom he had business relations as an employer, he was always ready to speak of others in the best terms that he could and he did not do this as a policy; he was naturally kindly disposed towards everybody. His capacity for detail was extraordinary, this was exhibited in business, in association work, and in social affairs. He has been called home, but the members of the American Pharmaceutical Association will not soon forget the genial smile and the warm handclasp of our de-

ceased friend; the recollection of his unselfish services will never cease.

"JOSEPH P. REMINGTON.
"WM. JAY SCHIEFFELIN.
"C. F. CHANDLER."

The following has been received from the Committee on Resolutions on the late Ewen McIntyre:

"EWEN MCINTYRE.

"WHEREAS, The American Pharmaceutical Association has suffered a severe loss in the recent death of one of its most faithful and devoted members, our former Honorary President, Ewen McIntyre, of New York City, the Nestor of American pharmacy, in his eighty-eighth year; therefore, be it

"Resolved, That we hereby express our appreciation of his sweet modesty, sterling integrity and pure character; and

"Resolved, That we bear testimony to his unselfish devotion and great services to the American Pharmaceutical Association; and

"Resolved, That we mourn his death as the loss of a true and noble friend and fellow pharmacist, whose memory will remain with us forever.

"H. H. RUSBY.
"J. F. HANCOCK.
"WILLIAM C. ALPERS."

Motion No. 17 (Fred L. Frauenhoff, Life Member, Old Style.) Moved by H. M. Whelpley, seconded by J. H. Beal, that Fred L. Frauenhoff, Aurora, Illinois be made a life member, old style without the publications of the A. Ph. A.

The Secretary and Treasurer have investigated conditions before deciding to make this motion.

Motion No. 18 (Appropriation to Women's Section, A. Ph. A.) Moved by J. H. Beal, seconded by J. W. England, that the sum of twenty-five (\$25.00) dollars be appropriated to the use of the Women's Section of the American Pharmaceutical Association. The appropriation is approved by the Committee on Finance.

Motion No. 19 (Election of Members.) You are requested to vote on the following applications for membership:

No. 60. John T. Jacobs, Dyersburg, Tenn., rec. by Ira B. Clark and J. O. Burge.

No. 61. Louis Polk Brown, 312 6th Ave. N., Nashville, Tenn., rec. by J. O. Burge and William R. White.

No. 62. Charles Kohler 1518 Chestnut St., Philadelphia, Pa., rec. by George M. Beringer and J. W. England.

No. 63. Henry William Colson, 5755 Sangamon St., Chicago, Ill., rec. by Wm. B. Day and A. H. Clark.

No. 64. Adolph Emil Anderson, 3018 Racine Ave., Chicago, Ill., rec. by Wm. B. Day and A. H. Clark.

No. 65. Harlen Wilson Searight, Certe Philippine General Hospital, Manila, P. I. rec. by Wm. B. Day and A. H. Clark.

No. 66. Alexander Caldwell Stuckey, 6352 S. Halsted St., Chicago, Ill., rec. by W. B. Day and A. H. Clark.

No. 67. William John James Paris, Rosiclare, Ill., rec. by J. E. Paris and H. M. Whelpley.

No. 68. Henry L. Klopp, 3421 Spring Garden St., Philadelphia, Pa., rec. by J. W. England and Jas. A. Garvey.

No. 69. Kelly Edwin Bennett, 8 Everett St., Bryson City, N. C., rec. by J. O. Burge and E. D. Ruddiman.

No. 70. Frank D. Osborn, 526 W. 14th St., Davenport, Ia., rec. by J. H. Beal and J. W. England.

No. 71. Job Fong, care Chung Mei Drug Co, Canton, So China, rec. by Charles H. LaWall and E. Fullerton Cook.

No. 72. Jonas Frederick Rupert, Hooper, Neb., rec. by J. H. Beal and J. W. England.

No. 73. Theodore A. Piszczek, 948 Forest Home Ave., Milwaukee, Wis., rec. by Henry C. Schanck and E. G. Raueher.

No. 74. Elizabeth Jenkins, 5th St. and Wayne Ave., Dayton, Ohio, rec. by Anna G. Bagley and J. H. Beal.

No. 75. Wm. P. Jenkins, 5th and Ludlow Sts., Dayton, Ohio, rec. by Anna G. Bagley and J. H. Beal.

No. 76. Charles Edward Hoey, 11 Frederick St., So. Framingham, Mass., rec. by R. Albro Newton and Elie H. LaPierre.

No. 77. Charles Anthony Forbrich, 5023 Marshfield Ave., Chicago, Ill., rec. by F. Berger and J. H. Beal.

No. 78. Rufus William Vickers, Murfreesboro, Tenn., rec. by J. O. Burge and H. M. Whelpley.

No. 79. Walter Andrew Beal, Jolo, P. I., rec. by Carl L. Benche and Arthur Neville.

No. 80. Louis Jeremiah Pollard, Jolo, P. I., rec. by Carl S. Benche and Arthur Neville.

No. 81. Henry Warren Dietz, Sergeant

Hospital Corps, U. S. Army, Augur Barracks, Jolo, P. I., rec. by George A. Paul and Arthur Neville.

No. 82. David Levin, 5214 Ballard Ave., Seattle, Wash., rec. by C. W. Johnson and Harry J. Siegel.

No. 83. William A. McBath, 310 W. Clinch St., Knoxville, Tenn., rec. by F. W. Ward and Ira B. Clark.

No. 84. Bruno A. C. Hoelzer, 2403 W. North Ave., Chicago, Ill., rec. by W. B. Day and A. H. Clark.

No. 85. Claude Everet Hicks, 1822 South Lane St., Seattle, Wash., rec. by C. W. Johnson and Harry J. Siegel.

No. 86. William Palmer Kirk, 400 Donner Ave., Monessen, Pa., rec. by B. E. Pritchard and J. A. Koch.

No. 87. Ludvig Alexander Rudolf Svante Lundgren, McKeesport Hospital, McKeesport, Pa., rec. by B. E. Pritchard and Louis Saalbach.

No. 88. Frances Ellsworth Wells, Peoria State Hospital, Peoria, Ill., rec. by A. H. Clark and Maggie M. Gray.

No. 89. Dr. Wallace Calvin Abbott, 4605 N. Hermitage Ave., Ravenswood, Chicago, Ill., rec. by Clyde M. Snow and W. B. Day.

No. 90. Dr Alfred S. Burdick, 2148 Gidding Ave., Chicago, Ill., rec. by Clyde M. Snow and W. B. Day.

No. 91. Merle M. Burdick, 4846 N. Hermitage Ave., Chicago, Ill., rec. by Clyde M. Snow and W. B. Day.

No. 92. Frederick Hunsche, 4415 N. Winchester Ave., Chicago, Ill., rec. by Clyde M. Snow and W. B. Day.

No. 93. Franklin Peale Summers, 1525 Winnemac Ave., Chicago, Ill., rec. by J. W. England and W. A. Pearson.

No. 94. Fred H. Young, 1759 Ainslie St., Chicago, Ill., rec. by J. W. England and W. A. Pearson.

No. 95. Edw. H. Ravenscroft, 4757 E. Ravenswood Pk., Chicago, Ill., rec. by J. W. England and W. A. Pearson.

No. 96. Harloven McCousland, The Leon, 2703 N. Clark St., Chicago, Ill., rec. by J. W. England and W. A. Pearson.

No. 97. Patrick H. Lindley, Havana, Kan., rec. by M. W. Friedenburt and R. B. Bird.

J. W. ENGLAND,

Secretary of the Council.

COUNCIL LETTED No. 11.

PHILADELPHIA, March 3, 1913.

To the Members of the Council:

Motions No. 17 (Fred L. Fraunhoff, Life Member, Old Style), No. 18 (Appropriation to Women's Section, A. Ph. A.), and No. 19 (Election of Members; Applicants Nos. 60 to 97, inclusive), have each received a majority of affirmative votes.

Advices have just been received of the death of Professor Oscar Oldberg, Ex-President of the American Pharmaceutical Association, on February 27, 1913, at Pasadena, Cal.

The following communication has been received:

CINCINNATI, OHIO, Feb. 12, 1913.

We, the undersigned members of the American Pharmaceutical Association, do hereby petition the Council of the A. Ph. A. to grant us the permission to create a Branch of the A. Ph. A. in the city of Cincinnati, State of Ohio, said Branch to be known as the Cincinnati Branch of the American Pharmaceutical Association:

John Uri Lloyd, Charles T. P. Fennel, Theodore D. Wetterstroem, Charles A. Apmeyer, Frederick A. Weissmann, Charles G. Merrell, E. H. Thiesing, Julius Greyer, Edward Voss, Jr., Frank H. Freericks, A. O. Zwick, Fred S. Kotte, Wm. L. B. Brittain, Louis Werner, Otto F. Bange (Newport), J. Ferd Zuenkler, J. F. Kutchbauch, Otto Katz, George M. Merrell, A. M. Grenle (Newport), Charles F. Harding, F. W. Kisker, H. G. Schmuelling, Charles Diehl, J. W. Vester, Henry Eichler Charles Ehlers, Peter Robert Buchert, Rudolph Fack, Miss Bertha Ott, Lydia DeCourcy, Fred J. Minsterketter, Edward Lindemann.

Do you approve petition as above presented? This will be known as *Motion No. 20 (Petition to form Cincinnati Branch, A. Ph. A.)*.

Motion No. 21 (Election of Members). You are requested to vote on the following applications for membership:

No. 98. Sidney Burke Willette, 3322 Bell Ave., St. Louis, Mo., rec. by L. Raymond Tyson and J. W. Mackelden.

No. 99. Edward Lindeman, 2216 Ohio Ave., Cincinnati, Ohio, rec. by Charles A. Apmeyer and Fred S. Kotte.

No. 100. Fred S. Kotte, S. E. corner 6th and Elm Sts., Cincinnati, Ohio, rec. by C. T. P. Fennel and A. O. Zwick.

No. 101. H. G. Schmuelling, 5th and Sycamore Sts., Cincinnati, Ohio, rec. by Charles A. Apmeyer and Theo. D. Wetterstroem.

No. 102. John W. Vester, S. E. corner 5th and Broadway, Cincinnati, Ohio, rec. by Theo. D. Wetterstroem and Charles A. Apmeyer.

No. 103. Louis Werner, 914 Race St., Cincinnati, Ohio, rec. by Frank H. Fredericks and A. O. Zwick.

No. 104. Henry Eichler, N. E. corner 10th and Madison Ave., Covington, Ky., rec. by Charles A. Apmeyer and Theo. D. Wetterstroem.

No. 105. Frederick John Minsterketter, Auburn Ave. and Saunders St., Cincinnati, Ohio, rec. by Charles A. Apmeyer and Theo. D. Wetterstroem.

No. 106. Charles Diehl, 103 Hosesia Ave., Cincinnati, Ohio, rec. by Theo. D. Wetterstroem and J. W. England.

No. 107. Charles Frederick Harding, S. E. corner Liberty and John Sts., Cincinnati, Ohio, rec. by Charles T. P. Fennel and Theo. D. Wetterstroem.

No. 108. August C. Herting, 7043 Woodland Ave., Philadelphia, Pa., rec. by John R. Meinhart and Ambrose Hunsberger.

No. 109. Sidn. Hiff Conger, Sewanee, Tenn., rec. by J. O. Burge and William R. White.

No. 110. Gilbert A. Teegardin, 114 North Court St., Circleville, Ohio, rec. by Fred L. Fickhardt and Geo. B. Kauffman.

No. 111. H. S. Kirk, 519 J St., Sacramento, California, rec. by J. H. Beal and J. W. England.

No. 112. Rudolph Fack, 1626 Sycamore St., Cincinnati, Ohio, rec. by Charles T. P. Fennel and Theo. D. Wetterstroem.

No. 113. Peter Robert Buchert, Vine St. and Auburn Ave., Cincinnati, Ohio, rec. by Charles T. P. Fennel and Theo. D. Wetterstroem.

No. 114. Lydia DeCourcy, 827 W. 8th St., Cincinnati, Ohio, rec. by Charles T. P. Fennel and Theo. D. Wetterstroem.

No. 115. Miss Bertha Ott, Cincinnati, Ohio, rec. by Charles T. P. Fennel and Theo. D. Wetterstroem.

No. 116. George J. Elliott, 56 10th St., Detroit, Mich., rec. by J. H. Beal and J. W. England.

No. 117. William Leo Broadrup Brittain, 4108 Carter St., Norwood, Ohio, rec. by Theo. D. Wetterstroem and Anna G. Bagley.

J. W. ENGLAND,
Secretary of the Council.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

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From 2342 Albion Place, St. Louis, Mo.
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Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.



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From Washington, D. C.,
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To 548 Broad St., Fremont, Neb.

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To 2433 Telegraph Ave., Berkeley, Cal.

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Twin Falls, Idaho,
To Main and Overland Sts., Burley, Idaho.

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From Guimaras, P. I.,
To residence unknown.

POTTS, THOS.,
From 127 N. Dearborn St.,
To 122 S. Michigan Blvd., Chicago, Ill.

BROWN, FRANK L.,
From Boston, Mass.,
To residence unknown.

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To Irvington, N. Y.

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From New York, N. Y.,
To 16 Vine St., Brooklyn, N. Y.

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From 501 15th St.,
To 1303 13th St., Moline, Ill.

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From 1577 Cherokee St.,
To 1243 Cherokee St., Denver, Colo.

TANNER, T. B.,

From 1660 Hough St.,
To 1363 Central Ave.

RIESS, H. W.,

From Ft. McHenry, Md.,
To Ft. Wayne, Mich.

OLSON, FRED P.,

From Ashton, S. Dakota,
To Box 85, Mobridge, S. Dak.

FRICKE, CHAS. B.,

From Omaha, Nebr.,
To 556 Broadway, Council Bluffs, Iowa.

VANE, PATRICK P.,

From Ft. McIntosh, Laredo, Texas,
To 309 B St. S., Washington, D. C.

SENECAL, HENRY C., Sgt. H. C. U. S. A.,

From Ft. Totten, N. Y.,
To care Chief Surgeon, Manila, P. I.

TRANSMUTATION OF BOVINE TUBERCLE BACILLI.

Rabinowitsch expresses surprise that so little attention has been paid to the statement of Fraenkel and Krause over ten years ago that they found tubercle bacilli in the bile in five out of eleven tuberculous cadavers, that is, in 45 percent. She has recently examined seventeen cadavers, all with more or less advanced tuberculosis except one in which there was only a calcified mesenteric gland. The intestine was involved in eleven cases, including one with a liver process. Inoculation of guinea-pigs with the bile gave positive results in 70 percent, showing the danger of infection of others from bacilli in the stools as they may come from the bile as well as from swallowed sputum. The bacilli cultivated from the lungs were all of the human type, but those cultivated from the gall-bladder in six cases were of the bovine type in two. She thinks that these findings confirm the assumption of transmutation of one type into another. The tubercle bacilli infecting the body may persist in the original type in one organ while conditions in another organ may modify the type. It seems plausible to assume that bovine infection in children persists in a latent form until the bacilli become modified into the human type—this would explain why the bovine type may be prevalent in children while the human type is almost invariably encountered in adults. The fact that this transmutation outside of the organism has only rarely been observed in experimental

research (O. Bang, Eber, Bongert) does not conflict with this assumption. Nature will not let herself be driven. The practical result of the research reported is a warning against the danger of elimination of tubercle bacilli in the feces from the bile, both in human beings and in cattle. A cow reacting to tuberculin without any apparent disease may infect the milk by bacilli in her feces. The importance of examination of the feces for tubercle bacilli in animals is emphasized by Fraser's recent report that he found infection of the bovine type in 60 percent of sixty-seven children with surgical tuberculosis at Edinburgh. Orth declares that if every tubercle bacillus of the human type could be annihilated at one stroke, yet all the measures in vogue against tuberculosis would have to be kept up just the same as long as bovine tubercle can be transmitted from animals to man.—*Journ. A. M. A., Vol. LX, p. 634.*

TYPHOID CARRIERS.

Conradi is convinced that endemic typhoid is maintained by the chronic carriers. Even with the intensive measures for stamping out typhoid introduced into southwestern Germany on an extensive scale in the last few years, it has proved impossible to detect all the chronic carriers. Each epidemic, however, was traced to a chronic carrier, and he states that five out of every hundred typhoid patients is left a chronic carrier. Another fact that has been established beyond question is that four times as many women as men become chronic carriers. He thinks that this has some connection with the fact that women are more predisposed to gall-stones than men; possibly the corset and tight clothes interfering with the circulation may explain the prevalence in women. He states that his experimental and clinical research to discover some way of sterilizing the carriers has failed of results. The only thing that can be done is the constant reminding of chronic carriers of the necessity for care and foresight. Measures for disinfection should be advised exactly the same as for typhoid patients. But his eight years of service in fighting contagious diseases has left him with no illusions as to the carrying out of these measures. This much is known, however, he adds, that the causes of endemic typhoid have now been revealed.—*Journ. A. M. A., Vol. LX, p. 634.*

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE PHARMACIST AND THE PATENT MEDICINE.

LIKE the gallant soldier who said in his letter, "I am writing this with my sword in one hand and my pistol in the other," so the modern pharmacist stands before the medical profession, with one hand full of proprietary cure-alls, and with the other distributing literature advocating a return to rational prescribing and an increased use of official preparations.

Without attempting to excuse him altogether, the writer feels that the charge so frequently made that the druggist is attempting to work both ends from the middle is in large measure unjust. Those who make it do not realize that the druggist's apparent inconsistency is pressed upon him by force of circumstances in which patent medicines represent his business necessities, while the propaganda for rational prescribing represents his aspirations for better things and his strivings for a more professional, as well as for a more profitable business.

What are Proprietary Medicines? Under the head of proprietary medicines are to be included all ready-made medicines, secret or non-secret, that are put up in packages, of uniform style and size, and known by a specific title the exclusive right to which is claimed by some particular person. They are usually unofficial mixtures; but if Druggist Jones puts up U. S. P. Antiseptic Solution and claims for it some special virtue not possessed by the same preparation as commonly compounded, then to all intents and purposes his composition is a proprietary preparation. Of course it is open to Smith and Brown to claim that the antiseptic solutions of their manufacture are the same as, or even superior to the article made by Jones, but they could not claim to be selling Jones' preparation when they were in fact selling their own.

It is this right to the exclusive use of the maker's own name, or of an arbitrary or fanciful title to distinguish his product, that constitutes the essence of proprietorship in medical compositions, as in other things.

As thus understood, the term proprietary medicine includes not only the common or garden variety of "patent medicines" made by the man who lives "away off," but also the corn cure and cough mixture put up by the retail druggist and sold to his local constituency, as well as the more pretentious line of preparations put up by the druggist's cooperative companies. Moreover, since there is a distinct tendency in the food and drugs acts to consider toilet articles and cosmetics, and in fact all compositions that are not distinctly foods, as drugs and medicines, it will be seen that the definition will apply to the greater proportion of the stock of an ordinary drug store, and consequently that it is a question the solution of which touches the interests of every druggist, whether large or small.

The A. M. A. Attitude. In respect to patent medicines, the medical profession occupies a more fortunate, or at least a different position than that occupied by pharmacy. Through its chief exponent, the Journal of the American Medical Association, it has expressed itself in terms that, if not final are at least far from being obscure. As the writer understands it, this organization's attitude upon the subject is something near the following:

It regards non-secret proprietary preparations as legitimate provided they possess real therapeutic value, and are labeled and advertised in accordance with the requirements prescribed by the Council on Pharmacy and Chemistry, and provided, also, that they are sold only to or through the medical profession.

It does not regard as legitimate any medicinal preparation of secret composition, or which is advertised to or sold directly to the laity.

While the Journal's attacks upon proprietary medicines of the latter class have been addressed mainly to those which are plainly fraudulent, yet this by no means represents the full extent of the A. M. A. policy. From the A. M. A. standpoint the "trail of the serpent is over them all," and there can be no such thing as a legitimate proprietary medicine that assumes the competency of the untrained layman to diagnose his own case and select the appropriate remedy for it.

It does not, however, condemn the sale to the laity of "simple household remedies," which term we understand to apply to simple official mixtures when sold under their official titles, and not exploited with the aid of literature describing the symptoms they are expected to remove or the ailments they are intended to relieve.

It believes that the patent medicine business is wrong in principle; it does not believe that it can be reformed, but that it should be exterminated, and it would regard as ideal a situation that would require remedial agents always to be administered by a legally qualified physician, or in consequence of his diagnosis and advice. As a corollary, it believes that the layman is not able to properly diagnose his own ailments, and that he should not accept medicines that do not come through official channels, the previously named exception as to "simple household remedies" being in the nature of a concession to popular ignorance and prejudice.

The A. M. A. attitude upon the general proposition is thus fairly definite.

and should further definition be required it will no doubt be forthcoming when the necessity becomes apparent.

The makers of patent medicines may be assumed to have a policy equally well defined; pharmacy alone does not seem to have a definite program, nor have the mass of pharmacists apparently decided upon which side of the fence they will finally drop when the lines are strictly drawn and they are called to act upon a legislative proposition to abolish the patent medicine business entirely.

The Pharmaceutical Program.—It will probably be admitted without argument that all pharmaceutical associations and the great majority of all pharmacists disapprove, absolutely and at all times, of proprietary medicines that are distinctly fraudulent in character, or that contain habit-forming drugs in such proportions as to either tend to create a drug habit or minister to it if already formed, or which contain potent drugs in such quantities as to render them dangerous in the hands of the general public, but beyond this the position of the pharmacist has not been clearly defined.

It is true that the official organ of the A. Ph. A. does not accept the advertisements of medicines advertised directly to the laity, and that on many occasions the Association has accepted with approval papers and resolutions condemning the proprietary medicine business in general terms. It is also true that during its more than sixty-one years of existence it has been constant in its advocacy of the use of official preparations, and that it entered upon the publication of the National Formulary admittedly for the purpose of providing physicians with a list of open formula preparations that might be prescribed in place of many similar proprietary articles.

It must be admitted, however, that the A. Ph. A. has apparently recognized a distinction between the retail druggist's "own make" of such preparations and the widely advertised secret patents, upon the ground that knowing the composition of the former he can conscientiously recommend them. As such preparations are as much proprietary medicines as any others, this concession at least partially clouds its title to a consistent and thorough-going opposition to such medicines as a class.

Beyond this somewhat qualified position of the A. Ph. A., there has been no consistent attempt, at least so far as is visible to the naked eye, to declare any definite general policy upon the subject, nor any attempt to draw a dividing line between legitimate and illegitimate preparations, or between proper and improper methods of exploiting them. There has been no specific declaration as to whether the business as a whole should be considered as an outlaw, or only that portion of it that deals in distinctly fraudulent and dangerous preparations; no attempt to formulate any authoritative declaration as to what should be the attitude of the craft as a whole upon this question, or as to the attitude which it should assume toward projected legislation affecting the advertising and sale of proprietary medicines.

For want of definite and authoritative leadership, therefore, each member of the craft has hitherto been a law unto himself. Among pharmacists we find all grades and degrees of opinions, some as intolerant of patent medicines of all kinds as the most radical of physicians; others as tolerant in their attitude as the most rampant patent medicine manufacturer could desire; while the

majority have been in the main indifferent, or content to recognize a more or less hazy distinction between legitimate and illegitimate ones; placing in the former class those which contain ingredients of approved therapeutic value and not dangerous in the hand of the average citizen, and in the latter class those possessed of the opposite qualities; or advertised in extravagant or misleading terms, or for the cure of diseases generally recognized as being practically incurable.

Now it would seem that the time has come for a more definite declaration of policy upon this vexed question, and for the associations which represent pharmacy to declare themselves upon the general proposition in terms so clear and definite that all men may know where they stand.

Though some may contend to the contrary, there is little doubt but that the average druggist has a sincere desire to deal justly with both public and the medical profession, and that he would welcome any authoritative guide by which he might regulate his conduct, and that if such a guide were provided he would be inclined to follow it.

A Tentative Proposition.—As a tentative proposition the writer suggests that the A. Ph. A. appoint a Council on Proprietary Medicines, to inaugurate the work, and to determine, first of all, whether there is or can be such a thing as a legitimate proprietary medicine which a druggist may conscientiously recommend and sell to the general public, and whether on the whole the public is benefited or injured by the use of such ready-made medicines. If these two questions can be answered in the affirmative, the next step should be to determine whether it is possible to draw a distinct line of demarcation between legitimate and illegitimate remedies, whether compounded by the druggist himself, by druggists' cooperative societies, or by those who are neither.

This council should also be charged with the duty of formulating rules for distinguishing between proper and improper methods of advertising, and to do whatever else may be necessary to the first step toward bringing order into a chaotic and disordered business.

It may be objected that such a tribunal already exists in the A. M. A. Council on Pharmacy and Chemistry, but this objection is not valid, because the prime reason for the new council would be to enable organized pharmacy to place itself on record on this question. Organized medicine has already taken its stand, now let pharmacy take its courage in its hands and do likewise, for until some distinctly representative pharmaceutical body shall have passed on the subject, pharmacy will not have discharged its duty either to itself or to society, and individual pharmacists will be at liberty to claim the lack of authoritative declaration as an excuse for playing fast and loose with the patent medicine business.

The settlement of this question is pharmacy's own business, and pharmacy should take hold with courageous hands and settle it.

J. H. BEAL.

Book Reviews

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. Vol. XXV; 511 pages; paper binding. E. Merck's Chemical Works Darmstadt. American distributors, Merck & Co., New York.

This annual compilation of chemical and therapeutic information originated in brief reports of a similar character which were issued at irregular intervals by their distinguished editor, E. Merck, beginning in 1870. From the first the value and impartiality of these communications were so well recognized that the increasing demand for them soon led to their issue as an annual publication. The total distribution at the present time amounts to 60,000 copies annually, divided among the four languages, German, English, French and Russian.

According to the established policy of the editor, the report deals with medicinal products which have a well recognized scientific and professional interest, and hence excludes from consideration remedies of secret composition, or which for other reasons are of doubtful character.

Notwithstanding its connection with a commercial enterprise, the report is now, and always has been, distinguished by its entire impartiality, the medicaments produced by rival concerns being given as fair treatment as those originating with the house of Merck.

The present volume differs from its predecessors, mainly in its greater size. In line with the policy established several years ago, it contains chapters devoted to the special consideration of certain important groups of drugs and medicinal preparations, and giving a fairly comprehensive review of the literature concerning such pharmacological groups. Examples of this kind are found in the present volume in the chapters devoted to the consideration of the "glycerophosphates," and the "digitalis glucosides and allied drugs."

The publishers announce that the stock of copies remaining for distribution is limited, but that as long as any are available single copies will be sent to physicians and pharmacists who apply for them, sending 15 cents for postage, no charge being made for the volume itself.

J. H. BEAL.

PHARMACAL PLANTS AND THEIR CULTURE. By Albert Schneider, M. D., Ph. D. California State Board of Forestry, Sacramento, Calif. 175 pages; paper.

The above volume, issued under the auspices of the California State Board of Forestry and compiled by Dr. Albert Schneider of the California College of Pharmacy, is intended to give a general review of the plants of that state which have or have had some use in pharmacy and medicine.

Chapter one is devoted to general considerations, under which are discussed climatic conditions and distribution of flora, lists of California drugs obtainable

in the market, lists of drugs that may be collected profitably, general suggestions for the cultivation of medicinal drugs in California, cultural methods, collecting and preparing drugs for market, etc., etc. Chapter two presents a review of the literature relating to the subject, both under the names of their respective authors and by subjects. Chapter three deals with a list of drug plants which it is presumed may be profitably cultivated in California with suggestions regarding culture, collection, curing, marketing, etc. Chapter four is devoted to an account of the native and introduced medicinal and poisonous drugs of the state, and is accompanied by many interesting notes relating to the use of the various native drugs by the Indians, their possible utilization for various purposes, etc., etc. This chapter comprises the greater portion of the book, covering over 100 pages and names and describes briefly a total of 869 species.

A large amount of valuable and interesting information is given under the respective titles, and the publication should result in greatly increased interest in the subject of drug cultivation in California and elsewhere.

J. H. BEAL.

OIL OF CHENOPODIUM IN HOOKWORM DISEASE.

Schuffner and Vervoort state that in their practice at Delhi in the last fifteen years they have found uncinariasis extraordinarily prevalent. In the last eight months they have been giving oil of chenopodium a thorough trial in 1,457 cases, comparing the efficacy with that of thymol, naphthol and other vermifuges. Compared with eucalyptus oil with a coefficient of 38, naphthol with 68 and thymol with 83, oil of chenopodium surpassed them all with 91. Another great advantage is that it expels ascariides with the hookworms, thus impressing the minds of the patients much more than when the insignificant hookworms alone are expelled. It is also comparatively pleasant to take.—*Journ. A. M. A., Vol. LX, p. 706.*

A GREAT COMBINATION.

One druggist makes a solid, substantial success of his business because he is shrewd at the buying end; another because is shrewd at the selling end; another because he has what his customers demand and of the very best quality. What an equipment has that druggist who includes all three in his business dealings.—*The Spatula.*

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

THE PRODUCTION AND VALUATION OF BELLADONNA IN MINNEAPOLIS.

MANLY H. HAYNES, PHM. B., AND E. L. NEWCOMB, P. D., MINNEAPOLIS, MINN.

Recent discussions on the advisability of admitting the entire plant of *Atropa Belladonna* into the Pharmacopoeia to represent the drugs *Belladonnae Radix* and *Belladonnae Folia* make it important to investigate carefully the production of this drug and the valuation of the various parts of the plant.

Belladonnae Folia and *Belladonnae Radix* are derived mostly at the present time from cultivated plants and, although the methods of cultivation are no doubt well understood by those who grow the plants commercially, it may be of interest and some value to give the methods used and observations recorded in research along this line carried on at the medicinal plant garden of the College of Pharmacy of the University of Minnesota.

Many investigators have reported difficulty in germinating the seed of *Atropa Belladonna* and some even consider that it is much easier and more economical to propagate by means of root-cuttings. Propagation by means of root-cuttings is essential in the work of the plant breeder to enable him to directly develop plants which possess the desired characteristics. Propagation from seed, however, is the method more frequently employed, as this yields a much larger number of plants in a given time. When the desired strains have been produced by plant breeding and are fairly well established, then propagation from the seeds of those strains may be carried on, provided proper care is taken to prevent reversion.

Borneman¹, it appears, succeeded best when he planted the seeds under a cold cover in the early part of April, for he thus secured germination of seventy-five percent. Twenty-five percent of these seedlings, however, were lost when transplanted to the open field.

Schneider², in a rather lengthy article, discussed seedling in cold frames and in the open and reported very satisfactory results in growing plants in a cold frame. Field sowing, however, was not satisfactory as the seeds require some time to germinate and are liable to be smothered out by weeds or hindered in their growth by the surface soil becoming packed. In connection with this work a number of methods were tried to shorten the time of germination, but these were for the most part without success.

Culture Experiments at Minneapolis.—At the College of Pharmacy of the University of Minnesota, a large number of plantings were made under varying

conditions, but as yet no way has been found to materially shorten the period of germination. It has been noted, however, that in nearly every planting test a small percent of the seed would germinate in from two to three weeks, the remainder requiring four to five weeks when kept moist and at a temperature of from fifty to sixty degrees Fahrenheit. Three percent of one lot that was placed over hot water pipes germinated in eight days while the remaining seeds that germinated required five weeks. A similar variation has been noted in the time required for germination of seeds of a number of other drug plants. This indicates the need of study of the germinating qualities of seed from fruit collected at different stages of maturity. Various temperatures have been tried here to hasten the germination, but with indifferent success. Home-grown seed germinated about one week earlier, under the same conditions, than imported seed. (This is also the experience of Schneider). The young plants are rather tender after a rapid, forced growth at warm temperature and a large percentage usually die if planted in the open. However, by watering the young seedlings sparingly and increasing their exposure, their growth is somewhat stunted, but they thus become very hardy and stand transplanting in the open with very little loss. Well-rooted plants germinated under these conditions were placed out into the open drug garden about June 1, and after they became well rooted in the open field, they withstood a great deal of dry weather, probably because of the reserve in the starchy roots. The amount of foliage produced during such periods was much less than when the plants were abundantly watered. Some of the plants were retarded in their growth by the attack of green aphid and white fly. Whale oil soap and tobacco water proved efficient in eradicating these insects and the plants soon recovered.

Practically every sample of seed tested yielded in time a large percent of plants, although some of the seed was known to be several years old. The results would indicate that the seed of *Atropa Belladonna* retains its vitality for a long time. The germinating period, however, does not seem to materially increase with the age of the seed.

Under normal conditions of temperature, the young seedlings if provided with abundant water and good drainage grow quite rapidly and are usually sufficiently large for field planting within eight weeks.

While it is generally considered that *Atropa Belladonna* will not survive winters where the temperature drops to ten degrees Fahrenheit, it is interesting to note that during the winter of 1910-11, one of a number of plants purchased in Philadelphia and planted in the drug garden of the College of Pharmacy of the University of Minnesota where the experiments recorded in this paper were carried on, in the fall of 1910 lived outside through the winter during which the temperature went as low as twenty-five degrees below zero (Fahrenheit). During the past winter (1911-12) two plants, which made a very strong growth from seedlings planted the spring before, were protected with only a small amount of litter, but survived through a temperature of thirty-three degrees below zero (Fahrenheit). Five seedlings which were not planted out in the open but hardened by being kept in a confined and protected area in the slat-house also survived the winter. While these observations do not warrant any attempt to com-

mercially winter over *Belladonna* in this region, they indicate that it may be possible by selection to develop perfectly hardy strains of *Atropa Belladonna* for sections of the country where the temperature is much lower than ten degrees Fahrenheit. Of course it must be borne in mind that in breeding hardy strains a sacrifice must not be made for plants of low alkaloidal value. This phase of the subject will be discussed in a later part of this paper.

In order to develop the most thrifty plants possible the plots devoted to their culture were watered frequently and with this treatment the plants made a very rapid growth. The soil of one plot consisted of a light sandy loam mixed with about six inches of well-rotted peat, which latter had been on the ground for a number of years. The character of this soil being somewhat different from that in which most other investigators have grown the plant, results different from theirs were to be expected. The difference was particularly noted in the root system, there having been developed a large number of fine rootlets while the main tap roots were only of average size. A second plot in which the soil consisted of a rich sandy garden loam produced plants having very thick and long tap roots, many from five to six centimeters in diameter at the crown and thirty to fifty centimeters in length. Only a few fine rootlets were produced by the plants in this second plot.

The overground portions of the plants growing in the sand and peat soil plot made an average growth in height of one meter and produced but one main overground stalk, excepting a few in which the overground stalk was injured by cutworms when the plant was first set out. These few latter plants produced from three to six somewhat shorter and smaller stalks. The plants in the rich garden loam produced one overground stalk each of an average height of 1.2 meters. These latter plants were more vigorous and produced heavier foliage. The average weight of the entire fresh plants from the sandy peat plot was four hundred forty grammes, while the average weight of those from the garden soil was six hundred sixty grammes. All the plants under observation corresponded botanically to what is known as *Atropa Belladonna* and only slight differences were noted in a few of the plants. Possibly these differences may prove indicators of certain physiological varieties. I regret that I did not record them at the time. The possibilities of developing such strains have been well indicated by Tschireh² and True³. The development of strains of plants especially valuable for their medicinal qualities is of importance to those who will handle vegetable drugs in the future. No two plants are identical, although they may correspond so closely that they are classed in the same genera and species or even botanical varieties. This individuality is entirely a separate study from that involving the effects of various ecological conditions upon the constituents of plants. The development of the desired individual qualities, with the elimination of the undesired, into permanent traits of character is deserving of careful study. By the application of the law of Mendel, it has been shown that certain desired morphological characters may be reproduced with some degree of certainty in the third generation and we have every reason to believe that with such a variation there will be not only a change in the form of the plant, but also in the constituents. In other words, the possibility of producing by plant breeding, for example *Belladonna*,

with a uniform but large amount of mydriatic alkaloids, is promising. On the other hand, it has been shown that plants of very closely related species cling to their individual characteristics with great tenacity. It has been shown by foreign workers that scions of a non-HCN rosaceous plant when grafted upon the root-stalk of a species of the same family yielding a large amount of HCN, made a vigorous growth but developed none of the cyanogenetic glucosides, the root-stalk supplying the nutrition for the growth of the grafts in the usual manner, but not causing any change in the chemical composition. Thus it would seem that the work is not without some perplexing problems.

Histology.—Transverse sections were made from the roots of twenty separate plants grown in the drug garden and these all corresponded to typical *Atropa Belladonna* roots, showing tracheæ with bordered pores, spheroids of calcium oxalate and the characteristic starch grains and the typical structure of *Belladonna*. Very few fibers were present. No raphides of calcium oxalate were found. Sections were also made of a large number of leaves and these conformed histologically to the type specimens of *Belladonna*.

Assays.—The following assays were made from drugs collected from the various plants as indicated:

On September 8 the first-year plants were flowering and fruiting abundantly and at this time twenty plants from the sand-peat soil plot were taken up and the roots separated and dried in a large drying oven at a temperature of about 90° C. The leaves and tops were air dried in the laboratory.

Seven or eight plants were cut off at the ground and air dried in the laboratory. These were then separated into two portions. The first, Sample A1, which consisted of the tops and small stems under five millimeters in diameter, fresh, assayed 0.4046 and 0.3931 percent, respectively, being above the U. S. Pharmacopœial requirement of 0.30 percent. Sample A2, which consisted of stems over five millimeters in diameter, fresh, assayed 0.37 and 0.37 percent. The roots from one plant below the crown yielded 0.2691 and 0.2601 percent of alkaloids. One sample consisting of roots deprived of crown and rootlets and representing the roots from several plants yielded 0.42 and 0.42 percent of alkaloids. The small rootlets, which were easily detached from the roots after drying, were reserved separately for assay and yielded 0.6027 and 0.6256 percent. One whole plant consisting of leaves, stems, fruits, flowers, roots and rootlets yielded when assayed 0.261 and 0.266 percent of alkaloids.

The young white shoots from fourteen plants which were being wintered over in a root cellar were collected from the plants and dried. These sprouts lost 95.5 percent of moisture upon drying and assayed 0.688 percent of alkaloids. The plants growing in the rich garden loam were not disturbed until spring when upon assay the root of one plant gave a valuation of 0.345 percent of alkaloids.

The results of various investigators have shown more or less variation of the alkaloidal content of *Atropa Belladonna* grown under different conditions. Rippe⁵, on working with leaves obtained from plants cultivated in the Shenandoah Valley, found that leaves collected from plants in September assayed 0.32 percent. The seed for these plants was sown in January of the same year and transplanted several times before being set out in the open. About 66 percent of

the plants survived the winter and leaves collected from the plants the following July assayed 0.68 percent. Leaves collected from the plants in October yielded 0.48 percent and the roots collected in the same month assayed 0.38 percent.

Experiments⁶ carried on in the garden of medicinal plants in Golden Gate Park, San Francisco, on a "made soil" consisting of sand and dirt hauled in, showed the climate to be well adapted to the culture of *Belladonna*. The leaves and stems of the third and fourth years' growth showed an alkaloidal content of from 0.4 to 0.8 percent of alkaloids; the stem alone gave an alkaloidal value of 0.5 percent. Results obtained in this laboratory show that stems of a diameter larger than five millimeters do not show as high an alkaloidal value as the smaller stems. The results obtained on the assay of an entire plant grown in the sand-peat plot are relatively low, owing partly to the amount of large stems present. A closer observation of the results indicates considerable variation in different plants. The root and tops, exclusive of large stems, when assayed appeared to yield a drug of good quality.

Two very interesting points were noted; first, that the fine rootlets which are usually lost to the commercial drug showed a high alkaloidal content as previously stated, of 0.60 percent, and second, the young sprouts upon starting in the spring assayed 0.688 percent.

Rippetoe's results would tend to show that the maximum alkaloidal content is reached in the leaves about July when the content begins to decrease. Whether this alkaloid is lost in the plant processes or whether it is returned to the root is a question. If it is true that the alkaloid is returned to the root after a certain period, then plants which have been deprived of part of their leaves would yield roots low in alkaloids if collected the same season. If, however, the whole plant be collected the whole of the alkaloid is obtained, but the reduction in alkaloidal percentage, due to the presence of the large stems, would probably materially decrease the value of the drug. On the other hand, if the leaves are collected the first year and the roots allowed to remain to grow the following year and the foliage allowed to grow unmolested and to dry on the plant, the root would then probably yield a high percentage of alkaloid. In this way the crops could be gathered alternately from various plants, new plants being started each year to replace the roots used for the production of the drug.

The roots of one plant grown on the garden soil, upon which the tops were allowed to die and which had started to sprout in the spring, yielded upon assay 0.345 percent. If the root had been assayed just previously to the time of sprouting, it would probably have given a much higher result as it has before been stated that the sprouts contain a large amount of alkaloid which is derived directly from the constructive metabolism carried on by the root.

It has been indicated by Tschirch⁷ that under certain conditions plants may be forced to produce amounts of alkaloids far in excess of what they ordinarily produce. The production of *Cinchona*, containing 0.16 percent of alkaloids by the Dutch in Java is a fine example of what may be done along pharmaco-physiologic lines. Thus with *Atropa Belladonna* the conditions under which the plant can be forced to produce a maximum amount of alkaloid must be carefully studied. This work involves careful study of soil and climatic conditions.

It appears from results so far obtained here that *Atropa Belladonna* can be successfully cultivated in Minnesota, if due care is taken in the germination of seeds and the handling of young plants. The development of perfectly hardy strains, however, is a matter which will take much experimenting and careful study. The results of this work point out a number of other lines which must be followed up before certain questions can be answered and much work will need to be done before the cultivation of *Atropa Belladonna* is a commercial possibility for Minnesota.

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- ⁴True—Proc. A. Ph. A., 1909, p. 827.
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THE MEDICINAL PLANT GARDEN OF THE COLLEGE OF PHARMACY OF THE UNIVERSITY OF MINNESOTA, June 19, 1912.

CRUDE GELSEMININE AND ITS POSSIBLE CONSTITUENTS.

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In reports of the proceedings of this section there will be found, for several years past, a record of a continuous series of experiments, which have given a clearer conception of the nature of that uncrystallizable alkaloid, named by Thompson *Gelseminine*.

In the last paper, the writer reported that from this alkaloid could be extracted another which, if finally proven to exist, he would name *Gelsemoidine*. It was suggested that this *Gelsemoidine* could be separated from *Gelseminine* by alkaline solvents—the former being soluble, the latter insoluble in such a solution. Our work this year, upon a new lot of drug (50 pounds) has given us an opportunity to collect more of this crude alkaloid, *Gelseminine* and study it more thoroughly.

Fifty pounds of the drug were extracted first with Petroleum Ether, the drug dried and exhausted with 95 percent alcohol. The alcohol percolate was concentrated to soft extract in a vacuum. This soft extract was extracted with benzol (using a total of 4000 cc.) after the addition of 75 cc. 26 percent ammonia solution. The benzol extractions were washed out with 5 portions (300 cc. each) of 2 percent H_2SO_4 . The acid solution shaken with four portions (500 cc. each) of chloroform to remove the so-called *Gelsemic Acid* (3.9 gm. of crude acid were recovered.)

The purified acid solution (after making alkaline) was shaken out with ether-chloroform (5 to 1) using 2000 cc. in all. The filtered solution was then concentrated in vacuum to small volume and set aside. Crystals of *Gelsemine Hydrochloride* (5.6 gm.) were deposited. The supernatant liquid would not crystallize on further concentration, but left a gummy mass (13 gm.) of Thompson's *Gelseminine hydrochloride*.

It should be stated in passing, that the dregs (drug exhausted with alcohol, above referred to) were again extracted with KOH solution. This alkaline percolate was washed with chloroform, and the chloroform solution put through a similar treatment as above. It was found that the alcohol-menstruum failed to exhaust the drug, as about 1.5 gm. each of Gelsemic Acid and Gelseminine were obtained, in addition, by this process.

The above Gelseminine Hydrochloride (crude) was taken up for special investigation. Previous study of this uncrystallizable alkaloid indicated that it was composed of two alkaloids, one soluble, the other insoluble in weak alkali. (See report of, in Jour. Amer. Phar. Asso'n, May, '12). This method of separation (by the use of alkaline solvent) was repeated and the two (supposedly different) alkaloids were separately purified, and then tested with the usual alkaloidal reagents for identification. To my surprise exactly similar color reactions were obtained. The characteristic color reaction for the purified alkaloid being: with manganese dioxide and sulphuric acid it gives a violet color which soon changes to dark green and finally to a dark blue, remaining about two hours.

If the alkaloid is impure by containing even a small quantity of Gelsemic Acid or Ammonium Chloride the above reagents give a reddish purple color which changes to a green and, in about five minutes, to a dark brown color. This is worthy of note, as one may be tolerably sure of the elimination of these impurities when this latter color reaction disappears. These impurities are very likely to contaminate the product, therefore it is a useful test.

The fact that these two seemingly separated alkaloids gave similar color tests led to the suspicion that they might be the same. Physiological tests confirmed this suspicion. On redissolving the portion (supposedly insoluble in alkaline solvent), denominated Gelseminine, in acidulated water precipitating again with ammonia, and persistently washing again the fresh precipitate it finally yielded to the solvent action. This fact naturally leads to the conclusion that if there be two alkaloids in Gelseminine the method of separation proposed is not practicable as one is soluble with difficulty and the other is also soluble in alkaline liquids. That there are two alkaloids in this amorphous substance is confirmed by the investigation of C. W. Moore of Burroughs and Wellcome Laboratory, (see Jour. Chem. Soc'y, Nov. 1910, No. LXXVII, p. 2223). This author, as quoted in a former paper, affirms the existence of two amorphous alkaloids besides the crystalline Gelsemine, in gelsemium. He says one of these has more basic properties than the other. I shall endeavor to obtain his method of separation so that I may test them physiologically.

Further experiments with the amorphous gelseminine have shown, what was not before suspected, that its salt, hydrochloride, is partly soluble in ether and in chloroform. Hence any acid solution of the alkaloid washed with the immiscible solvents to remove Gelsemic acid and extraneous matter, will take out appreciable quantities of this active ingredient.

Our thanks are here expressed to Chas. Vanderkleed of Mulford and Company for the crude extractions.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

PHARMACEUTICAL DEGREES.

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In these days of ever-increasing numbers of institutions of learning, vying with each other to invent new degrees for old as well as new branches of study, there have come into use so many abbreviations for degrees, titles, names of institutions, societies, etc., that it is worth while for us to consider some of these degrees, their abbreviations, and the academic usage underlying their formation; and such a consideration seems especially called for at present among pharmacists, on account of the multiplicity of degrees conferred by the different schools of pharmacy, and the recently published idea, originating in pharmaceutical circles, that some of them are "fraudulent."

Formerly, and originally, the only degree conferred in pharmacy was that of "Graduate in Pharmacy" (Ph. G.); the noun "graduate" means: "One who has been graduated by a college or other institution of learning; hence, one who has completed a course of anything; as, a graduate in law, etc." (Standard Dictionary.) The verb "graduate" means: "To admit to an academic degree at the end of a course of instruction in a school, especially a college or university;" a popular but erroneous use of the term is: "To receive a degree, as from a college or university; as, he graduated in medicine." In other words, the verb graduate is an active verb when referring to the college, but passive when referring to the one who is graduated.

It follows from these definitions, that, strictly speaking, "Graduate in Pharmacy," besides not being perfectly correct in grammatical form, is not in itself a degree, in the academic sense; it means: "Graduated in Pharmacy" and merely shows that a certain course of study has been satisfactorily completed.

The word "degree" means: "One of a succession of steps, grades or stages; a measured or estimated part of upward or downward movement; as, degrees of excellence, Masonic degrees, etc."

The Academic Degrees.—The most commonly employed academic degrees are three in number: *Baccalaureus*, Bachelor; *Magister*, Master; and *Doctor*, Doctor. These degrees may be applied to any study whatever. The right to confer these degrees is usually granted in a charter given by the state to the institution that confers the degrees.

Let us consider these degrees seriatim. The Bachelor degree is an old one; but this word has nothing in common with the same word meaning an unmarried man; it may be conferred on women as well as on men. The name of the degree

was probably derived from an old French word, *bachelerie* or *bachelage*, implying apprenticeship, youth, inexperience. (See Br. Enc.); it is conferred as the "first and lowest degree in any study in which degrees are given."

When conferred in schools of pharmacy, it implies "apprenticeship" for it is conferred on students who have not yet had practical experience in the drug business.

Some claim that the word "bachelor" for an academic degree was derived from the Latin word "*baccalaris*" or "*baccalaureus*"; there is no such Latin word; it does not occur in classic or post-classic Latin; it was not used by any Latin author prior to A. D. 1450, but seems to have been "barbarously formed" in comparatively modern times, in an attempt to latinize *bachelerie* or *bachelage*, after the latter had been introduced as an academic title. The usual form for this degree in modern Latin writing or in diplomas is "*baccalaureus*," m. or "*baccalaurca*," f.

The Bachelor degree does not imply great learning; if anything, it implies the contrary, unfinished education, for many Bachelors in a science continue their university studies to secure the Doctorate in the same science. The Bachelor degree does not depend on any specified or definite length of time of study, for it is granted by universities, etc., after one, two, three or four years of study, depending on the nature of the studies.

As far as the writer knows, every college of pharmacy which confers the degree of Bachelor of Pharmacy represents it as its first and lowest degree, and no college ever made any other, or "fraudulent," claims as to its meaning.

The Doctor degree (*Doctor*) is the highest degree for which a student may apply. It means: "The highest degree, as of Divinity, Law, etc., as evidence of learning and ability to teach"; the word itself is derived from the verb *docco*, to teach. When it is conferred in compliance with these qualifications it is a proper degree in pharmacy, but it should not be granted as the *first* and *lowest* degree, as is done by some schools of pharmacy; it is contrary to academic precedents, usages, and traditions, to cheapen the doctorate in such a manner.

The Master degree (*Magister*) was originally bestowed only as a very high honor and compliment on men who had been of signal service and were of exalted rank in their profession; something like LL. D. is now. While this high estimation of the *Magister* degree is not as strictly adhered to as formerly, the degree being now given to students for one or more years post-graduate work after having received the Bachelor degree, it is nevertheless far too high a degree to be given as the *first* degree in pharmacy, as is done by some of the colleges of pharmacy.

To certify in a diploma that a student fresh from college can be a Master of Pharmacy, in the world-wide and time-honored sense of the degree, shows a woeful lack of common sense, or a lamentable disregard for the truth.

The Difference Between Degrees and Abbreviations.—When an educational institution confers a degree, it confers the full degree—not its abbreviation; in most diplomas the abbreviations of the degrees are not mentioned. Any holder of any degree is entitled to use any abbreviation of it that he prefers, provided that it is sanctioned by usage or constructed in accordance with academic precedents and customs. The abbreviations are not the degrees!

Correct Abbreviations.—In a properly constructed abbreviation each word should be contracted so that it may be recognized without being misunderstood when standing alone, without context; this requirement, however, is not generally applied to the abbreviations for the academic degrees: Bachelor, B.; Doctor, D.; and Magister, M. Only, the holders of these degrees must not imagine they have any exclusive rights to the use of these abbreviations, for all these letters stand for many different meanings.

The Universal Dictionary of the English Language (1897), uses the following abbreviations, which are fairly correct, and may serve as examples of what abbreviations should be:

Agric., agriculture;	Etym., etymology;	Phil., philosophy;
Archeol., archeology;	Geol., geology;	Philol., philology;
Astrol., astrology;	Math., mathematics;	Phot., photography;
Astron., astronomy;	Mech., mechanics;	Phys., physiology;
Biol., biology;	Med., medicine;	Psychol., psychology;
Bot., botany;	Metal., metallurgy;	Surg., surgery;
Chem., chemistry;	Metaph., metaphysics;	Theol., theology;
Entom., entomology;	Phar., pharmacy;	Zööl., zoölogy.

We also quote a few such abbreviations from the Standard Dictionary:

Arch., architect;	D. Bot., Doctor of Botany;
B. Acct., Bachelor of Accounting;	D. Nat. Phil., Doctor of Natural Philosophy.
B. Chem., Bachelor of Chemistry;	

But suppose the Bachelor of Chemistry should write B. C., as is frequently done; while it is perfectly proper that he should use this abbreviation, yet it is ambiguous for him to do so, for the same abbreviation is also used for Bachelor of Surgery (Bachelor of Chirurgy, *Chirurgiae Baccalaureus*); it is also used by some institutions for the degree of Bachelor of Commerce (B. C.). The abbreviations B. C. or C. B. may therefore be used for these three branches of study, but none of the three can claim exclusive right to the use of C. B. or B. C.; and if the holder of one of these degrees feels aggrieved at the ambiguity of it, he has the remedy in his own control—he needs only to write the correct abbreviation for his own degree: *B. Chem.*; *B. Chirurg.*; or *B. Com.*, respectively.

The disadvantage of using initial abbreviations appears, for instance, in the widely used A. C. (*Ante Christum*, before Christ); but this may also mean A. C. (*Anno Christi*, in the year of Our Lord) or A. C. (After Christ)—two exactly opposite meanings!

The Standard Dictionary in an extensive list, mentions among many others the following syllabic abbreviations, saying of them that they are “commonly used by English-speaking peoples”:

Bach., Bachelor;
 Phar., Pharm., pharmaceutical, pharmacopoeia, pharmacy;
 Pharmacol., pharmacology;
 Phil., Philos., philosopher, philosophical, philosophy;
 Phil. S., Ph. S., American Philological Society;
 Phil. Trans., Philosophical Transactions;
 Phot., Photog., photographic, photography;
 Physiol., physiological, physiology.

Most of these are correct abbreviations because they are sufficiently complete not to be easily misunderstood. But even among these few abbreviations here quoted, there are improper or ambiguous ones; “phil.” may mean philology as well as philosophy. On the editorial staff of the Standard Dictionary there were

more than a score of "Ph. D's," but in this list they use Ph. only for philology, and not for philosophy or pharmacy. Recently the idea has been advanced that "it is an unpardonable fraud" to use Ph. in connection with an academic degree for anything but philosophy! This is a purely notional assumption, devoid of even a trace of justification in academic precedents or customs; the use of Ph. or phil. for either philosophy or philology and of Ph. for Pharmacy cannot be fraudulent, for long-established usage tolerates these abbreviations for these three studies.

Ambiguity.—All abbreviations or contractions of names of degrees, titles, societies, etc., or of any words whatever, to initials only, must necessarily be ambiguous!

Ambiguity means "capable of being understood in more senses than one"; it is not even remotely associated with the idea of deception or fraud. Ambiguity in the meanings of alphabetical characters dates back to the very origin of alphabets, in fact, to even earlier times when ikonographs or ideographs conveyed ideas. Thus: Among the ideographs from which the cuneiform and hieroglyphic alphabets were developed (Assyria, Babylon, Ninevah, Egypt 2000 B. C.), the circle was a symbol meaning the *sun*; it also meant *light, splendor, day*; it furthermore stood for *God, Creator, Eternity, nature*, and a lot of other concepts.

A half-circle or crescent meant the *moon*, or a *month*, and also *Kybele, Astarte, Diana*, and some other things. In Ancient Egypt the horizontal "pointed oval" meant a *mouth*, and later it stood for the letters l and r, the one sign for the two sounds, just as c stands for the sounds of s and k in English, and the sound th in Spanish.

In the course of time these old ideographs developed into letters, or signs for simple phonetic sounds; and from that time (about 4000 years ago) until now there has never been a time when some letters did not have more than one sound or stand for more than one meaning. It has been contended, quite recently, and for the first time as far as the writer knows, that it is "fraudulent" to use one alphabetical character for two or more meanings!

This charge was made in connection with the character Ph. used to mean pharmacy; but this charge might be applied with equal force against those who use Ph. to mean philosophy or philology, because this abbreviation has been used for many decades for all of these studies, and none of these studies can have any exclusive right to this abbreviation.

Ambiguous Abbreviations.—Under the heading "Degrees" the Standard Dictionary gives a list stating the degrees commonly granted and their current abbreviations, as they were in actual use prior to the time when this work was compiled, edited and published (the latter in 1895); compilation began many years previously, possibly now about thirty years ago.

Many of the abbreviations in this list are contractions to initials only—therefore of necessity ambiguous; but custom sanctioned (or tolerated) the use of such initial abbreviations and any institution has a right to use any initial abbreviations that fit its degrees.

There are no laws, and can be no laws, of copyright for initial abbreviations; as far as academic usage is concerned initial abbreviations are outlaws beyond the pale of protection against use by others for other purposes.

No institution can claim exclusive right to an ambiguous initial abbreviation for any particular study. Alphabetical characters, and any sequence thereof as initials, are free for the use of all. Any institution is entitled to use initial abbreviations for its own degrees, and if there are any who feel aggrieved at the resulting ambiguity, they can use correct academic syllabic abbreviations for their own degrees.

We quote the following abbreviations from the Standard Dictionary:

P. D., Ph. D., D. P., D. Phil., Doctor of Philosophy;

P. D., Ph. D., D. P., Phar. D., Pharm. D., Doctor of Pharmacy.

Ph. D. was recognized as an abbreviation for a degree in pharmacy as well as for a degree in philosophy! Dictionaries do not originate definitions or abbreviations, but simply record them when they have become firmly established in the language by usage and custom. Usage, therefore, sanctioned Ph. D. for pharmacy as well as for philosophy many years ago, so that this abbreviation had been "long established" for a degree in pharmacy long before any college commenced to confer the degree of Bachelor of Pharmacy.

Of course, the abbreviations will be different as we use the Latin or English names of the degrees:

P. D., Ph. D., *Philosophiae Doctor*;

D. P., D. Ph., D. Phil., Doctor of Philosophy;

P. D., Ph. D., Phar. D., Pharm. D., *Pharmaciae Doctor*;

D. P., D. Ph., D. Phar., D. Pharm., Doctor of Pharmacy;

The abbreviations for the bachelor degree in any study follow the construction of the Doctorate degree, by simply substituting B. for D., thus:

P. B., Ph. B., Phil. B., *Philosophiae Baccalaureus*;

B. P., B. Ph., B. Phil., Bachelor of Philosophy; and by strict analogy and strict adherence to academic precedents and usage, the abbreviations for Bachelor of Pharmacy are:

P. B., Ph. B., Phar. B., Pharm. B., *Pharmaciae Baccalaureus*;

B. P., B. Ph., B. Phar., B. Pharm., Bachelor of Pharmacy.

Duplication of Abbreviations.—Suppose we should all agree that initial abbreviations are undignified, improper, ambiguous and generally objectionable, yet, since they have been tolerated and sanctioned by academic usage for many decades they cannot at this late day be called fraudulent. Fraud means "an act of deliberate deception"; usually for gain, but in all cases deception is a necessary part of fraud! For instance: If some one claimed to be connected with the C. B. C. of St. Louis, and attempted on the strength of such connection to obtain a favor from some one connected with a C. B. C. (Christian Brothers' College), without really being connected with a Christian Brothers' College himself, that would be a fraud; but to simply claim to be connected with the C. B. C. of St. Louis, without being connected with a Christian Brothers' College, is not a fraud if he is a member of the C. B. C. (Century Boat Club) of St. Louis. Unless deliberate intention to deceive can be proven in connection with the use of any ambiguous abbreviation, a charge of fraud is unwarranted by academic precedents and usage.

Any man has a right to use his own initials, no matter how many thousand other persons in the world may have the same initials; the same is true of any society, college, university, etc., or for any name, title, degree, phrase or word whatever.

Initials as abbreviations are proper and lawful under any and all circumstances. They are used for religious, scientific, social and business purposes: I. H. S., D. D., Y. M. C. A., W. C. T. U., A. M. A., A. Ph. A., N. A. R. D., R. S. V. P., C. O. D., F. O. B., etc.; even for slang: N. G., T. W., P. D. Q., D. B., and G. B.; and under all conditions they are O. K. if they are the initials for the name, title, degree, word or phrase to which they apply.

Let us consider the letter B.; while it is used for the Bachelor degree it is also used for the following:

B.—Baptist, Baron, Baseball, Bath, Bay, *Beatus* or *Beata*, Before, *Bene*, *Benedictus*, Benevolent, Board, Bible, -bodied, Book, Botanical, Bounty; Brethren, Britain, Britannica, British, Brotherhood, etc.

The letter P. has been suggested as an abbreviation for pharmacy—"to prevent ambiguity," we suppose; but it stands for many other words:

P.—Pacific, Patent, Paternity, Patriarch, Paulus, Peace, Peoples, Petrus, Pharmaceutical, Pharmacopœia, Philological, Philosophical, Plea, Pontifex, *post* (after), Post (mail service), Presbyterian, President, Prevention, Probate, Procedure, Promotion, Propagation, Protective, Protestant, Publishing, etc.

And we might go on through the alphabet with similar results for many other letters. Nor are single letters only used for several meanings; the following combinations of initials are in use:

C. B. or B. C.—Bachelor of Commerce; Bachelor of Chirurgy or Surgery; Bachelor of Chemistry; B. C., Before Christ;

A. B.—Able-bodied seaman (in the navy); Bachelor of Arts; at bat (in baseball);

B. A.—Bachelor of Arts; British Association for the Advancement of Science;

D. F.—Defender of the Faith; Dean of Faculty; D—— Fool;

F. B.—Fenian Brotherhood; Free Baptists;

F. E. S.—Fellow Entomological Society; Fellow Ethnological Society;

P. D.—Doctor of Pharmacy; Doctor of Philosophy; Printer's Devil;

U. S. M.—United States Mail; United States Marine;

U. S. S.—United States Senator; United States Ship; United States Steamer;

U. S. A.—United States of America; United States of Africa; United States Army;

F. M.—Field Marshall; Foreign Missions;

F. R. A. S.—Fellow Royal Asiatic Society; Fellow Royal Astronomical Society;

F. R. H. S.—Fellow Royal Horticultural Society; Fellow Royal Historical Society;

M. P. S.—Member Pharmaceutical Society; Member Philological Society;

B. P.—Primitive Baptists; *Beatus Paulus*; *Beatus Petrus*; Bachelor of Painting; Bachelor of Philosophy; Bachelor of Pharmacy;

*Even this is ambiguous: *In hoc signo*, or "*Iesus Hominum Salvator*"; who will claim that either of these interpretations is a "fraud," or determine which one is so?

M. B.—Bachelor of Medicine; Bachelor of Music;
 D. M. or M. D.—Doctor of Medicine; Doctor of Music; Doctor of Mathematics;
 M. E.—Master of Elements; Mechanical Engineer;
 L. M.—Licentiate in Medicine; Licentiate in Midwifery;
 B. L.—Bachelor of Laws; Bachelor of Literature;
 B. E.—Bachelor of Elements; Bachelor of Elocution; Bachelor of Engineering;
 A. P. A.—American Pharmaceutical Association (formerly); American Poultry Association; American Protective Association; American Protestant Association; American Photographic Association; and several other A. P. A's.

Evidently, classic usage ignores the question of ambiguity and duplication in initial abbreviations altogether.

What Does Ph. Mean?—"Ph." is an alphabetical sign used to represent the Greek letter "phi"; it is not two letters, but one; the initial for pharmacy, philosophy, philology, pharology, and other words of Greek origin beginning with ph is not the letter p, but "phi," which on account of lack of a single type character, is conventionally expressed in Latin, English, German, French, and some other languages by the compound consonant sign ph (pronounced f); in Spanish it is written f., as in filosofía, filología, and farmacia (pronounced farmathia).

This initial ph cannot properly be divided, although this is often done by people who are either careless or who do not know any better. It is regrettable that this is so often done by pharmacists, as it shows that Pharmacy has not yet attained to the full dignity of a learned profession, although we may take courage from this, that many pharmaceutical associations are changing their former initial P. to Ph.; as: A. Ph. A., Mo. Ph. A., etc.

Ph. is the *only correct initial abbreviation for pharmacy*; it has been used for over a century in our country—for about ninety years in Ph. G. In fact, it was used for pharmacy before philosophers adopted it for their use; when the writer first became interested in College affairs and degrees the Doctors of Philosophy generally wrote "Phil. D." as they do now in European countries. If priority in the use of an ambiguous abbreviation had any weight (as it has not, and cannot have) then pharmacy would have first claim to the abbreviation Ph.; if usage or general opinion determined the matter, there are probably a hundred people in our country to whom Ph. means pharmacy for every dozen to whom it means philosophy; there are probably a hundred people who belong to some Ph. A. (pharmaceutical association) for every one person belonging to a Ph. A. (philosophical association).

But considerations of this kind have no bearing on the question of right or wrong in using the abbreviation.

Abbreviations of Pharmaceutical Degrees.—The following are only some of the variant abbreviations which are tolerated by academic usage, for degrees now granted in pharmacy: Ph. D., P. D., Phar. D., Pharm. D., D. Ph., D. P., D. Phar., D. Pharm., Ph. B., P. B., Phar. B., Pharm. B., B. Ph., B. P., B. Phar., B. Pharm., Ph. G., P. G., Phar. G., Pharm. G., G. Ph., G. P., G. Phar., G. Pharm., Ph. C., P. C., Phar. C., Pharm. C., C. Ph., C. P., C. Phar., C. Pharm., Ph. M., P. M., Phar. M., Pharm. M., M. Ph., M. P., M. Phar., M. Pharm., B. Sc.

Ph., B. Sc. P., B. Sc. Phar., B. Sc. Pharm., Sc. Ph. B., Sc. P. B., Sc. Phar. B., Sc. Pharm. B., Ph. S. B., Ph. B. S., P. S. B., B. P. S., Phar. S. B., Phar. B. S., Pharm. S. B., and Pharm. B. S.

To add to the multiplicity of allowable abbreviations, there are also other methods of abbreviating besides the syllabic and initial. Some are purely arbitrary, as Mo., for Missouri; Phm., or Phr., for pharmacy; others consist of the first and last phonetic signs, or letters, of the words: Me., for Maine; Vt., for Vermont; Ky., for Kentucky; etc.; only two of this latter kind are of interest to us here—Phy., for pharmacy; Dr., for Doctor.

When we add to the above list the many additional forms produced by using the abbreviations: Phm., Phr., and Phy., for pharmacy, Dr., for Doctor, and Ch., for Chemist, the list of abbreviations for degrees in pharmacy becomes quite appalling.

These abbreviations are all properly constructed according to time-honored academic precedents and custom; need we wonder that with the multiplicity of degrees in the many sciences and studies, there should be ambiguity?

What Remedy is There for Ambiguity?—Since the increasing habit of using initial abbreviations is mainly responsible for the present confusion and ambiguity in the use of abbreviations, the only successful remedy would be to discard initial abbreviations and return to the use of proper syllabic abbreviations. There is very little prospect, however, that this will ever be done, as every one will wait for the "other fellow" to do it first, after which there would be no further necessity to do it one's self. It would mean that all our schools would use only such abbreviations as "philol.," "philos.," "pharm.," etc., and even then the graduates would be under no obligation whatever to use such syllabic abbreviations.

The writer believes that initial abbreviations will continue to be used to the end of time, and that efforts to do away with them would be but like Quixotic charges against wind-mills. Let those whose tender souls are torn with anguish to see some one else use an initial abbreviation which they erroneously thought to be their own monopoly, or those who wish to be exact, or who take special pride in their own degrees, use correct syllabic abbreviations and quit worrying about others who prefer to use the ambiguous initial abbreviations.

Meanwhile, no argument or explanation is necessary to convince fair-minded and unprejudiced persons that the use of ambiguous initial abbreviations is not prohibited, but tolerated, if not sanctioned, by academic usage, and that the charge of fraud for using such abbreviations is unjustifiable and unwarranted by and contrary to academic precedents, customs, and traditions.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

IMPROPER CONTAINERS.

B. L. MURRAY, PH. C., B. S., A. M., RAHWAY, N. J.

It has come to my attention in numerous ways that many of the articles sold by the pharmacist are handled in containers not well suited to the proper keeping of the goods. This applies particularly to crude drugs, to chemicals, etc. Many instances are known where the pharmacist has had to suffer the annoyance and expense of explaining to the local Commissioner of Foods and Drugs how it happens that substandard goods are found among his wares. The pharmacist's explanation frequently is that he originally procured goods of proper quality—in fact, always tries to do so—but they sometimes deteriorate on keeping.

Of course we all know that very many of the articles found in our pharmacies do deteriorate in quality upon keeping. Much of this deterioration is at present unavoidable; but it is also true that much of it is avoidable. It is not necessary or advisable today to attempt to review all the means of lessening this avoidable deterioration. But one feature of it will be briefly discussed.

It seems almost unnecessary to say that, if one desires to have good goods, the goods should be kept in proper containers. Just here, however, lies a large part of the trouble of deterioration. Good goods are not always found in good containers. The mistake of putting goods into improper containers is not made by the pharmacist alone, nor is he alone responsible for it. The wholesale houses also are entitled to a share of the discredit; and the same is true even of the manufacturers themselves. Under present conditions, however, the pharmacist is in the best position to remedy the difficulty, and this is the reason for bringing the matter up in this place.

If any one here feels that it is impossible to obtain supplies in proper containers, I think he is mistaken. For nearly, if not quite, all goods, containers that will be desirable are at hand. They are not necessarily the most expensive containers, nor are they necessarily glass bottles. But for almost every article that usually suffers deterioration by drying out, by absorbing water, by the action of the air, by the action of light, by the action of insects, etc., there is a desirable container of some kind or other. It may be tin can, pasteboard carton, glass bottle, paper bag, wooden box, or what not—its one quality should be *suitability* for the goods it is to contain. It must carry the goods well from the producer to the user; it must still be suitable as a preserver of the goods, even after having been opened and reclosed. It must also, though, secondarily, be inexpensive.

I wish to repeat that proper containers just such as these are to be had. But

they must be asked for. And this is the pharmacist's opportunity! *Ask for them.* Do more than that, *insist* on having them. The customs of the trade at present are such that most articles of the kind here referred to are sold in the *cheapest* containers, almost wholly regardless of suitability. It is a mistake, but one that can be remedied. On your orders *specify* the exact containers that are desirable.

This leads to a feature of the question that cannot be overlooked. How is one to know just what kind of container is suitable? It is largely a matter of experience. If your resorcin turns pink, it is a good sign that it is being subjected to dampness and the action of the air. If your sodium carbonate and your borax have turned white, they have been allowed to dry out. Use air-tight containers. It is a matter of experience to decide what particular kind of container is best suited to your part of the country and your conditions. However, our textbooks and our books of reference, especially our Pharmacopœia and our National Formulary, can greatly assist us in this. In these books can be stated more fully the properties of many articles, and how better to avoid deterioration. Suitable containers can be described more fully by these books. Such descriptions and statements would, of necessity, be found under the individual articles rather than in the form of a general statement applying throughout the books.

The writer is not unmindful of the fact that deteriorated articles give results to the physician unlike those obtained by the use of undeteriorated articles. It is well known, too, that many pharmacists have difficulty in preparing certain prescriptions, elixirs, solutions, etc., because deteriorated goods are employed. The goods having dried out, for example, are no longer the goods called for in the prescription, elixir, or solution. The result is frequently a precipitate that cannot be accounted for, or some other manifestation of irregularity.

Deteriorated goods, generally due to the use of improper containers, no longer have the physical properties expected. They do not have the expected alkaloid content, or perhaps the expected ash content, or the expected solubility, or the expected melting point, or what not. They are unreliable, and should be avoided. And the way to avoid the deterioration is to prevent it.

Closely connected with this question of containers is the question of storing goods. It is not desired here to speak at length upon this topic, although much is to be said, and needs to be said. It is sufficient at this time to say that, if the pharmacist really wants to handle good goods of the kind here mentioned, he must, of course, first obtain them in proper containers, and then, secondly, keep them properly.

In conclusion, and in brief, (a) goods deteriorate for lack of proper containers; (b) proper containers for all articles are procurable; (c) to get them with certainty it is at present necessary to ask for them, at times with emphasis.

DISCUSSION.

Mr. Murray said he was in a position to see a great many goods that were put up for the trade, and knew from practical experience that when some of the goods would go out they would certainly spoil eventually, but the present demands of the trade were such that it could not be helped. He was here, therefore, merely to advocate that the retail pharmacists should help themselves a little bit. He had in mind no particular container. No one container would be suitable. Each article needed its own container, and sometimes in different parts of the country different containers were desirable for the same article. Just before

leaving home, an order had passed over his desk containing about a dozen items, and it was such a good example of this topic that he had copied it. This question of improper containers was not confined to the East nor to the West, though he thought the West was a little bit worse off than the East, because of the freight. Mr. Murray read the following list that a large house manufacturing pharmaceutical preparations had ordered:

Mercury Iodide Red.....	Paper.
Codeine Sulphate	Carton.
Digitalin German	Carton.
Sparteine Sulphate	Carton.
Iron Arsenate	Carton.
Quinine Arsenate	Carton.
Mercury Iodide Yellow Powder.....	Paper.
Ferrous Iodide Powder.....	Carton.
Arsenic Iodide	Carton.
Aconitine Crystals	Carton.
Strychnine Arsenate	Carton.
Quinine Valerate	Carton.
Phenolphthalein	Paper.

Besides those mentioned, there were four other articles on the order, but they did not specify the container. It was not unusual to receive such orders. He had seen many orders for goods to be imported, which were going to colleges that taught chemistry. They ordered many things in cartons which the pharmacist was unable to keep in glass bottles. He thought the quickest and best relief was for the pharmacist to ask for proper containers and insist upon them, because he knew they were to be found in the trade at this time, though they were somewhat difficult to get at first.

C. A. Mayo of New York said he thought Mr Murray might well have supplemented his paper by a tabular statement of the classes of things which required a certain kind of container. He was aware that it might look like an elementary procedure, but he was sure the paper would have been much more practical and valuable if the author had supplemented it by giving some practical suggestions of the classes of drugs that required certain containers—although it was known, of course, that such drugs as sodium salicylate could not be dispensed in paper cartons. He thought it would be valuable to have the druggists' attention drawn to this important matter.

Mr. Jones called attention to the pharmacopoeial requirement regarding containers for certain drugs, and said that the Drug Commissioners of some states required that drugs should be sold in containers as specified in the U. S. P. and N. F.

L. G. Blakeslee of St. Louis said he had only heard the last portion of Mr. Murray's paper, and his remarks supplementing it reminded him of something which had occurred here the evening of his arrival. He had overheard a conversation in the lobby of the hotel, in which the manufacturers were being condemned in round terms for sending out certain chemicals in unsuitable containers. His idea was, that the pharmacist should be the man to specify the container. He was satisfied the manufacturer would prefer to send drugs out in containers that would preserve them, and all the manufacturers furnished lists in which were specified all kinds of containers, bottles, cartons, cans, or whatever might be suitable for the particular drug or chemical, and all the pharmacist had to do was to specify what he wanted. In some localities sulphite of soda and salts of that character might be ordered in paper cartons, where the pharmacist expected to dispose of them quickly. Mr. Murray's paper was evidently based on the idea that pharmacists should understand this requirement. If the retailer desired his chemicals and drugs in a particular container, he should understand and specify the kind of container he wanted.

Mr. Jones said that in his section the pharmacists specified the kind of containers desired, but it was often impossible to obtain them from the jobber. He had known of sulphuric acid being shipped in cork-stoppered bottles, and a number of other things in equally improper containers. The jobber said it was impossible to get from the manufacturers the proper containers. It was up to the manufacturer and the jobber to correct

these conditions. He expressed the belief that the trouble was primarily with the manufacturer of chemicals.

Frank E. Mortenson of Pueblo, Colo., said he thought that while the retail pharmacist could help himself, he ought to begin at the bottom. The U. S. P. specified how a drug should be kept. When he came to buy, he would find that such a firm as Squibbs would put up their chemicals in the proper containers in every case, and if it was a substance that would only keep for a short time, he would find printed plainly on the label the precaution he should take when it arrived.

Cornelius Osseward, of Seattle, expressed his surprise to learn that any druggist would order such a thing as yellow iodide of mercury or red iodide of mercury in paper. He admitted that he might be "green," but he knew the jobbers were often to blame for sending out goods in unsuitable packages. All of his shelf-ware was in amber glass, he said, and he would have nothing in white bottles. He thought this had a good deal to do with deterioration in chemicals, the standing on the shelves from day to day and week to week, in improper containers. He was convinced that from experience chemicals would keep longer in amber bottles.

Chairman Utech related an experience he had had on the Drug Adulteration Committee of the Pennsylvania State Association. In that organization they had had occasion to interview some jobbers with reference to this question, and had learned that since the passage of the Pure Food and Drugs Law the wholesalers were trying to do what they could in the matter. He said he referred to the handling of bulk chemicals, such as magnesium sulphate. It was not an uncommon thing to get such chemicals with small sticks of wood and nails in them. When it came to sending out such salts as sodium bromide, potassium iodide and the like, if it happened to be a damp day, very frequently the paper would become so softened as to impair the quality of the whole package. He did not think the jobbers were entirely at fault in this matter, as it lay largely with the pharmacist himself as to how he received these articles: he could get what he wanted, and get it right, if he insisted upon it.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

A SYMPOSIUM ON "THE CAUSE OF THE COMMERCIAL TREND IN PHARMACY."

Mr. E. L. Scholtz, of Denver, opened the discussion and began by saying that the question of commercialism in pharmacy was one that was attracting a great deal of attention at this time, and that there was more or less criticism from those who were supposed to run ethical stores. In reading the proceedings of the Los Angeles meeting he had noticed that a member present from one of the Dakotas had read a very interesting paper on the subject of what he did not do. It was particularly interesting from his standpoint, but it should not be forgotten that circumstances and conditions varied, and that each man must look to the development of his own business. Everybody who had traveled about the country must have noticed how the drug business had developed from conditions existing thirty years ago. He well recalled the store in which he had learned the first principles of the business, and not for a moment would they have thought of having cigars, stationery, soda-water and other merchandise of that character. But the demands of the public had had a great deal to do with the development of the drug business in this country. Drugstores, for a long time, had been looked on as places of convenience. The public had gone for years to the corner drugstore for all sorts of information, and when a man visited a city where he was a stranger, he naturally stepped in at a place that looked like it was alive and as though the people knew their own city. Strangers in a city did not go to the department stores for information, and if they did they didn't get it. He related an amusing experience of his own, in going into a department store in Denver, directly opposite his own place of business, where he asked the young lady who waited upon him, and who apparently possessed but slight information of her own department, the question, "Can you tell me where the Scholtz Drug Company is?" to which he received the reply, "No, I don't know." She was interested enough, however, to turn and ask the man behind the counter if he knew, and this brought out the response, "It is somewhere around here, but I don't just know where it is." Drugstores, on the contrary, were intelligence headquarters, and that was where people went when they wanted to know things. It was wonderful, really, to think of the great variety of knowledge that the real student in a drugstore gathered in the course of a lifetime. He acquired a knowledge of science, history, botany, his own business, physics, chemistry, and frequently of the languages, and if he was a man of capacity, he possessed a fund of information that placed him far above the average business man.

The modern drugstore was an evolution, coming not from the desire on the

part of the owner to drift into side lines of merchandise, but as the result of repeated suggestions induced by the conditions of modern life. For instance, a community of cultured people would want magazines, and where the bookstore was located two miles downtown, various members of the family, young and old, would repeatedly come in to the corner and inquire, "Why don't you have such and such in the way of magazines." And it would be the same with stationery and other articles. The druggist would naturally say to himself, "Here is an opportunity of furnishing this family what they want. They are evidently too healthy to need drugs; therefore, why not sell them what they ask for?" It was the needs of the community that decided the character of the business done. The introduction of confectionery and the like had thus come into the modern, "progressive" drugstore. This evolution had continued until the regular drug feature of the business, with this class of stores, was rapidly approaching the *nil* point. If the druggist happened to be located in a Christian Science community, he would starve to death if he depended on his sale of drugs.

American travelers abroad were often inconvenienced in going into the chemists' shops of England, or the apothecaries' shops of Germany to buy familiar articles dispensed in American drugstores, only to have them refer him to the specialty stores that handled these particular goods. He illustrated by the experience of a friend of his, who went into one of the real pharmacies of Germany to buy a hot-water bottle, and they sent him to the rubber store. The rubber store was closed, and the patient had to suffer for the want of a hot-water bottle. In this country, rubber goods has been made a regular department in the drug life of the country, and the modern progressive druggist could scarcely find fault with the fact that he was required to carry such goods, as they were quite profitable.

Mr. Scholtz, recurring to his early days in the drug business, went on to say that he first worked for a German, who conducted a real apothecary-shop. In the afternoons, he had every opportunity of taking a nap or putting up Seidlitz powders. The prescription business was very limited, and there was plenty of leisure time.

As touching the prescription phase of the business, Mr. Scholtz said that it was a singular fact that the progressive druggists in this country, the ones that handled the general lines of merchandise, were the ones that put up the greatest number of prescriptions. He thought this was absolutely true, all the way from New York to San Francisco. He had investigated the subject, and with but one exception had found it to be true. This exception he had found on the Pacific Coast, in a chain of stores there. The manager had explained to him that for a long time their policy had been to avoid the prescription business—to ignore the physicians, for the simple reason that they could make more money in those lines to which no responsibility was attached, whereas in the putting-up of prescriptions the compensation derived was not sufficient to offset the danger always accompanying the compounding of prescriptions. Finally, a physician had suggested the establishment of a department for the filling of prescriptions, to be put in charge of a perfectly competent man. They had adopted this suggestion, and had been gratified to find that this department bade fair to make as

much money as any other, and this policy of catering to the needs of the physician would be continued.

Mr. Scholtz went on to state that when, within the past two years, he had suggested to one of the Denver physicians that he had in mind to establish a strictly physicians' drugstore, carrying nothing but what the physician needed in his profession, he was greeted with the admonition: "Don't do it; it will never pay here." This physician gave as his reason for his opinion that it would be impossible to get all the prescriptions that all the physicians would write, and it was doubtful if he could even get the larger part; that the contrary condition had existed for years, and the physicians naturally leaned to the druggists in the localities where they lived or had their offices, and they would certainly get some of the business. Mr. Scholtz said he had even been discouraged in this project by the owner of a building where he designed establishing such a store, on the ground that it would not pay, and that the physicians themselves wanted a drugstore of the modern type.

Mr. Scholtz concluded by saying that he personally felt the cigar business ought to be thrown out of the drugstore; that although he used the "weed" himself, he considered it about as senseless a habit as a man could have, and he wondered why sensible druggists catered to the use of tobacco.

Mr. Kendall said he had not yet been able to get all the "soda-fountain" out of his system, despite his repeated efforts, and asked Mr. Scholtz to discuss that proposition.

Mr. Scholtz replied that he knew he was treading on toes to say it, but the soda-water business had entered into the druggist's life in a peculiar way, and must be regarded as a permanent part of the business. Many years ago, when carbonated waters first became popular, it was discovered that bicarbonate of soda and sulphuric acid were required, both of which articles were obtained in the drugstore—that by the decomposition of the bicarbonate of soda, the carbonic acid gas was liberated and put into the water under pressure. People then said, "Why, that belongs to the drugstore!" Naturally, the druggist believed it, and took it up and has been at it ever since. From that first suggestion to the chemist of making carbonated waters himself, there had been evolved the modern drugstore soda-fountain.

Mr. Scholtz said that the man who had a good soda-fountain and served the proper drinks, became well known in his neighborhood, and was the man that would get the largest volume of business. The reason was that children and young people were the ones that favored the use of soda-water, and many of the older people enjoyed these drinks, as when well served they were delicious and never harmful. He doubted very much if anyone had ever drunk too much sodawater. There was no question but what a soda-fountain drew trade—though the soda business in relation to the whole volume of business was oftentimes very small. In his own business, it had never exceeded one-sixth of the entire volume of business. The cigar department, with him, was only about one-fortieth of his business, and it could be very well left off.

Another good thing about the sodawater business was, that the oftener people came to the store the more impressed they were with the character of the estab-

ishment, and they came to have confidence in the other departments, and that led to the reasoning that the drugstore they patronized in that way could put up medicine as well as the man who had no soda-fountain and who did not handle a general line of merchandise.

In conclusion, Mr. Scholtz said there was no particular advantage in the strictly prescription drugstore, from his point of view, in city life. Of course, if a man wanted to have leisure to read the newspaper all day,—as his first preceptor used to do,—or to read the drug journals, that was another point of view. He admitted that the word "drugstore" was not applicable to such stores, and he could not say what name would finally be evolved to describe them. When the term "drugstore" was used in ordinary conversation, people expected to find a place where they could get anything they wanted. It was simply a question of evolution, after all, and it would be a short-sighted business man who did not take advantage of the public demand, with the constant revenue to be derived from its recognition, and the increase in the pleasures of life resulting from an increase of income. Cameras, films and photographic supplies were striking illustrations of such demands on the part of the public. Ten years ago, the "camera craze" was hardly dreamed of, but the public began traveling, and every tourist had his camera, and went to the drugstore for his supplies. "You must supply the people with what they want," said Mr. Scholtz, "or you are not a good merchant."

Mr. Dick asked Mr. Scholtz if he thought it was good policy to meet cut-rate prices in the retailing of goods, and Mr. Scholtz replied that there was but one answer to such a question: That the wise man never permitted his competitor to beat him out.

Mr. L. G. Blakeslee, of St. Louis, in taking up the discussion, stated that when he suggested the "trend of commercial pharmacy," as a subject for discussion, he expressed the hope that the discussion would take the direction of the ascertainment of the real fundamental causes involved. He was sure that no one could better enlighten the members on the existing situation than Mr. Scholtz, but it had occurred to him that perhaps away back of all this there was a real cause, which was apt to be overlooked, and it was his idea to draw out that thought and have it discussed.

No one, said Mr. Blakeslee, had at the beginning, nor had today, higher ideals as to pharmacy than himself. He had purchased Professor Stevens' store in Detroit when the latter left to take a chair at the University of Michigan, and in this store there were no patent-medicines exhibited at all, but there was a large and lucrative prescription business, which it was his idea to perpetuate, and which he did to the best of his ability. After remaining in business for some time, he saw the coming cloud of commercialism, which had now so fully enveloped pharmacy, and disposed of this store, because he desired, if he was to become a commercial man, to follow another line. It was with the purpose of finding out just what this evolution was, and what it meant, that had led him to make a close study of the subject. It seemed to him that its causes lay very largely with the manufacturing pharmacist—though he expressed the hope that no one would draw the conclusion that he was saying a word derogatory to that interest.

as nothing was farther from his thoughts. The aggressive and extensive manufacturers had progressed so far in the manufacture of remedies which the pharmacist had formerly compounded himself that it left very little for the real scientific dispenser to accomplish. He had gone into Mr. Scholtz's drugstore and asked the clerk to go back through fifty prescriptions he had compounded today, and had found that approximately half of them were already prepared—such as elixirs, pills and the so-called pharmaceutical specialties. In smaller places, like towns of ten or fifteen thousand and downward, the percentage of prescriptions actually compounded was almost *nil*, as the manufacturer had made these preparations so scientifically, so neatly; and when he gave the doctor his therapeutics, he bought his remedies. Under these circumstances, what was left for the pharmacist to do? He recalled that, in Michigan, three large stores had given up the retail business, and were now manufacturing pharmacists; he thought possibly Mr. Scholtz some day might have a manufactory of his own here in Denver—as he realized that he was of the kind to get in the “bandwagon” and follow the procession or lead it. The manufacturer had made the commercial pharmacist, by making it easier for the physician and the public, as well as for the pharmacist himself.

Mr. Blakeslee, continuing, related an experience of his boyhood days in the country, and of his interest in the contents of a bottle that his father kept in the cupboard, a bottle marked “Hartshorn.” When he got to the University, he found it was called ammonia hydrate, or, more scientifically, NH_4OH . He learned there that this was the name he would use for that article when he went into business. He went into an old apothecary-shop in Ann Arbor and asked the clerk to give him two ounces of ammonia hydrate, and he well remembered the expression upon the face of an old gentleman back behind the counter, working on his books, as he looked over his spectacles and remarked, “That is one of those darned fools from the University. He wants ammonia water.”

Mr. Blakeslee said that, at one time, he was engaged in a very high-class prescription store, which did practically nothing but prescription work, and where they used from three to five pint bottles of syrup of hypophosphites a day. It was a simple compound, and he asked the physicians, if they would object to his dispensing a preparation he could make for them, instead of the proprietary articles they were accustomed to dispense, and they agreed to it. He made a satisfactory preparation, but when the representative of the manufacturing house came along and found that his order for syrup of hypophosphites was curtailed, he had taken a “fall” out of him that he would never forget. He afterwards found that this representative had such influence with the proprietor of the store that he made him discontinue the syrups he had prepared and go back to the manufactured preparation. This was the starting-point, said Mr. Blakeslee; this was where his eyes were opened. There lay the difficulty, he said.

Prof. Homer C. Washburn, Boulder, Colo., said he looked upon the trend of commercialism in pharmacy as an evolution of trade conditions parallel and analogous to the evolution of manufacturing clothing as compared with the early days. In the Colonial days every family had its spinning-wheel and its carpet-

weaver, and they made these things. But all this was changed, and now all business was specialized. Only a few years ago an engineer leaving an engineering-college engaged in all kinds of engineering projects. Today, he was a specialist in some branch of engineering. If a man was a good railroad engineer, or a good bridge engineer, or architectural engineer or civil engineer or electrical engineer, or chemical engineer, or naval constructor, he would succeed. It was the same with pharmacy. Likewise, the physician of thirty years ago knew very little about diseases, as also of materia medica. He knew nothing of bacteria. Today, on the other hand, one man devoted his whole time to pathology: one treated this form of disease, and the other that, and far better results were reached than in the days of the general practitioner.

Suppose, said Mr. Washburn, continuing, the druggist attempted to make a fluid extract or tincture of digitalis. Digitalis was a drug that did not respond to chemical analysis, and the strength of various specimens would vary very widely, a dozen different batches of drugs having as many different strengths. Not one retail pharmacist in 10,000 had the apparatus to assay physiologically the fluid extracts or tincture of digitalis, nor could the average pharmacist do so, even if he had the apparatus.

The manufacturing houses, on the other hand, would make a barrel of fluid extract of digitalis, and after it was thoroughly mixed they would put it in charge of an expert, a specialist in that line, and he would try it on one hundred or two hundred frogs, dividing the frogs into lots of five or ten, giving them successive doses. In this way would be determined the strength of that digitalis in heart- tonic units, and if the assay showed a greater number of heart- tonic units than called for he would cut it down, and if it contained less he would concentrate it until the right amount was reached. This manufacturer sold the jobber, and the jobber sold the retailer, and each cc. of the extract had exactly the same physiological power as any other cc. The pharmacist, on the other hand, if he were capable and had the necessary apparatus, would make perhaps a pint of the fluid extract or tincture of digitalis, and it would take as long to assay that amount of the tincture as it would the manufacturer to assay his barrel of tincture. Here the question of economy played an important part.

Mr. Washburn concluded by saying that he believed the pharmacist should be *able* to make a good many things, and some he *should* make, but many things the manufacturer could make so much cheaper than the retailer that he could not afford to undertake them. He thought one mistake that schools of pharmacy made was to give the student the idea that he was to be absolutely ethical in the highest sense of the term; that he was going to be an apothecary, and was not to stoop to trade conditions that maintained in other lines of commercial pursuits. Such teaching was an injustice to the student. He should be made acquainted with actual conditions, so that he might know exactly what he would have to meet, and in this way he would be far better off.

F. W. Nitardy, of Denver, said that he had presented a paper before the Section on Practical Pharmacy and Dispensing, in which he had quoted a list of 100 of the most commonly-used pharmaceutical preparations of the U. S. P., and N. F., which he was sorry to say all druggists did not make. He knew

exactly what it cost to make these, including the cost of material, allowance for waste and full allowance for time required, and also allowance for what might be called "overhead charges," or the cost of doing the business. He had compared the prices of these 100 or more pharmaceutical preparations, ranging from elixirs, syrups, spirits and solutions, ointments and tinctures and aromatic spirits, —all through the list of commonly-used preparations,—with the very best prices to be obtained from the leading pharmaceutical manufacturing houses, taking the jobber's discount off their list, and found a very wide margin. The difference was so great that if 50 percent, all the way through, were added to the cost of these goods as given by him, the cost would still be about on a level with the manufacturer's prices. The reason for this was that the manufacturers had heavier expenses than the retail pharmacist had when he made these articles himself.

Replying to Mr. Washburn's remarks upon the subject of tincture of digitalis, Mr. Nitardy said there were half a dozen preparations in the Pharmacopoeia that would require that sort of assay, but this was not necessary if he bought the proper drugs. He could find physiologically assayed digitalis leaves, and he could make a tincture from them, and that tincture would be just as good as he could buy, and at half the price.

He did not think Mr. Washburn's drawing of an analogy between the clothing business and the drug business fitted exactly. No such crude ways were employed by the druggist in making his own preparations as some of the forms employed by the manufacturer. Mr. Nitardy said there was another advantage to the druggist in making his own goods, in that he could show the physicians and the public that he was a real pharmacist, and knew something about what he was doing, and not an ordinary merchant handing out wares over his counter. In the drug business, it was absolutely necessary to have the confidence of both the physicians and the public, and when the druggist was able to turn out finished pharmaceutical products, he would gain that confidence.

Mr. Washburn, replying to Mr. Nitardy, suggested that the gentleman had spoken entirely from his experience with the drug company with which he had been connected since he had left college—a company having a large manufacturing department, and making several hundred preparations, as he understood. It was not in the class of the larger pharmaceutical manufacturers, of course, but likewise not in the class of the druggist having a corner drugstore in a small village. He asked Mr. Nitardy if he considered that the druggist doing business in the small towns of the country, of some two or three thousand inhabitants, who outnumbered a thousand to one such institutions as he was connected with, could make these preparations as cheaply as they could buy from the manufacturer. This was the real condition that had to be met.

Cornelius Osseward, of Seattle, said that this was a subject after his own heart, and that what applied to the large store applied to every store in the United States. One great advantage in the preparation of his own articles by the pharmacist was in the fact that he could say to the physician and the public that he was dispensing absolutely fresh drugs, which could not be truthfully said where he bought from the jobber. His claim was now, and had always been,

that the druggist knew nothing as to whether the preparations he bought and had on his shelves were active or not. He was decidedly of the opinion that he should make his own simple preparations. He was willing to admit that the manufacturer had his proper place, and that he should make a certain line of goods, for the very reason that he could do so cheaper than the small dealer. These were comparatively few, however, and there were a great many things the manufacturer made today where he was infringing on the rightful occupation of the retail pharmacist, and, as for himself, he was opposed to the manufacturer's "getting more out of him" than he could help.

Charles Clayton, of Denver, agreed with Mr. Osseward in the statement that what applied to the largest retail drugstore in respect to manufacturing its own preparations applied to the small store as well. While it was true that the druggist could not make one pound of compound syrup of hypophosphites at the same cost that he could buy a gallon or more from the jobber, he could make it cheaper than he could buy a single pound from the jobber. As was commonly known, the manufacturers usually had a very much lower price, proportionately, on bulk quantities, and it was a constant temptation to buy the larger quantity to get the better price. This was bad policy, however, as it was frequently a long while before the goods could be disposed of. Mr. Clayton said he thought that the average retail druggist could afford to do many things for himself, as, for instance, the filling of quinine capsules—although in his own experience he had found that he only saved about 15 cents a thousand on them, and he thought his time was worth more than that, considering how long it took. On the other hand, he could buy Seidlitz powders of U. S. P. strength and composition for less than he could afford to put them up.

As to the commercial trend of pharmacy, Mr. Clayton said he did not think it was so much a result of supply and demand, as Mr. Scholtz had asserted, as it was the absolute necessity of adding these things to the druggist's line "to keep his head above water." He believed that a large proportion of those who went into the retail drug business did so with the idea that they were to conduct ethical pharmacies; but when they found that the landlord demanded his rent money, and that they had to have something to live on, which demands the legitimate drug business did not supply, they had to add other lines.

A. V. Pease, of Fairbury, Neb., thought that the discussion illustrated forcibly that many times in propounding and elaborating theories men lost sight of their exact application. The druggist should not be a one-idea man, but a man of many ideas, many faculties and many talents. He should also be a manufacturer as well as professional man. But, at last, he was a merchant. He had long ago made up his mind to make everything he could, even if it cost him as much as to buy from the manufacturer, for the benefit of the practice and the maintaining of his skill. He had likewise given close attention to accurate and careful buying, and it had appealed to him from the first that cooperative buying with his neighbors was the sensible thing to do. This was the trend of the times, and he suggested that the members would find it profitable to take up this subject for discussion in their several home towns and put it into active practice. "Experi-

ence meetings" sometimes brought out the best there was in men, and an interchange of ideas, with friendly criticism, meant progress.

Continuing, Mr. Pease went on to tell how the idea of cooperative buying had so impressed him with its value that he was led to investigate the matter and gather such data as he could, and finally got some drug friends to go in with him and form a straight-out wholesale drug house, which had earned dividends from the very start—dividends not only on his stock, but on his purchases.

The history of the Rigsdale stores in England, which did a business of hundreds of millions each year, had given him his inspiration. He was also a member of a similar club in his State (Nebraska), and had found it a decided advantage; its members got together occasionally and talked over conditions. He had just today received by mail proof of a half-page ad in one of the great dailies of his State, and every man of his club in Nebraska had his name on that page. This was a chain of stores, but the stores were owned individually by the members. Every member was a part of this chain, and tied to the company by actual investment, but controlled their own stores. He believed the business would constantly grow, as it had been doing, and that cooperative buying and cooperative manufacturing was the inevitable trend.

Mr. Nitardy said that, if not out of order, he would like to go back to the first subject under discussion, to reply to one of Mr. Washburn's statements, to the effect that the laboratory with which he was connected was out of the ordinary class of retail drug stores. This might be true as to a few preparations that he made in large quantities, but his list comprised something like 650 different pharmaceutical preparations, and the great majority of them were not made in quantities of over a pint at a time. He was satisfied that if Mr. Washburn would come to his establishment and compare his prices with those of the pharmaceutical manufacturing houses he would be converted to the idea that it would pay the druggist to make these things for himself.

Gus C. Kendall, of Meridian, Miss., said that he had not intended to participate in this discussion, as he had been so much in evidence yesterday, but could not refrain from making the suggestion that if the members were to discuss some of these propositions "from now until the next session of the A. Ph. A.," they would be no nearer their solution. He commended the remarks of Mr. Scholtz as being one of the most intelligent discussions of the subject he had ever listened to on the commercial side of the drug business; but he nevertheless maintained, and defied successful contradiction, that the pharmacist of today was the only professional man that was not living up to the standard of his profession.

Specialization was the order of the day in every line but pharmacy. This was noticeably true in medicine and surgery, not to mention dentistry. In these days of progress and advancement, a man didn't even have to go to an old-time practitioner when his horse or his cow got sick—the veterinarian attended to that.

All this was a plea for the specialist in pharmacy—although Mr. Kendall admitted that conditions would have to govern this matter to a large extent.

He closed with a tribute to the progressive little city in the South, where he lived, where it was supposed generally in the country that "everybody was suffering from the hook-worm, when, as a matter of fact, since the discovery of 'Vinol' they were getting rid of that."

Wm. D. Dick, of Lawrence, Kans., added his testimony to the value to the druggist of manufacturing a number of elixirs and other preparations himself, and said his experience had proven that it could be done at a profit by anyone who would undertake it. He had no manufacturing chemist, but that was not really required, with the knowledge that was furnished by the Pharmacopœia and National Formulary. He thought any good, ordinary druggist could manufacture these things and be thoroughly safe in saying they were up to standard. If the druggist was very careful, it would mean a profit to him, and he would have the satisfaction of knowing that his preparations were absolutely such as he would like to recommend. It would be a preparation of quality—which could not be said of every preparation bought of the manufacturing pharmacist. There was no "cutting" in his town, and he thought it always unwise to cut prices, and that the druggist would sooner or later "cut his own throat" by engaging in that practice. The druggists in his town had educated the people to understand that when they wanted medicinal products they must go to the drug-store for them. A department store had started on a line where the druggists found it was injuring them, but they had succeeded in getting them to withdraw that and a number of other preparations they were selling even below cost, thus saving a profit to themselves. He realized that conditions in the larger towns and cities—as Denver, for instance—were different. He and his fellow-druggists were all on good terms, and whenever a "proposition" came along two or three of them would get together and buy and get the discount, thereby purchasing as cheaply as any jobber could do.

H. H. Whittlesey, Pocatello, Idaho, continuing this discussion, said it seemed to him that the drug man or pharmacist, be he a man of commercial instinct or high ideals, was entitled to the profits which came with the evolution in pharmacy, and which had made it a commercial business rather than an ethical one. He lived in a town of 30,000 inhabitants, and they had no cut prices. "It is a land of eternal sunshine and fair prices," said Mr. Whittlesey. He had watched the evolution of the drug business, had noted the many different products which had been exploited, and it seemed to him that it was proper for the druggist to embrace any opportunity to make a profit out of any side line that did not conflict too strongly with his ideals. He was also of the opinion that he could make many of his own preparations, as Mr. Nitardy had suggested. He thought the pharmacist who had spent time and means to prepare himself for the skillful practice of his profession was entitled to all the profit that he could legitimately realize, and he believed in extending the business to embrace those things that would pay a good profit. He was opposed, however, to making an entire sacrifice of ideals. He had been taught pharmacy by Remington and materia medica by Maisch away back in 1874, and naturally he had started in with high ideals. He spoke of the vast difference in conditions between the time when he started

out in Chicago, where it required three prescription men to make pills and fill the prescriptions that came in, and those of the present, as illustrated in his own experience, when he had to do this work himself because of the lack of experience the average drug clerk had in the preparation of pills. He advocated the buying of supplies that could be secured to better advantage than if the druggist prepared them himself. He concluded by the statement that under the modern conditions of life, where everybody wanted an automobile, and desired to have a good house to live in, with electricity to light it and gas to cook with, and to dress his family well,—all of which he considered legitimate expenditures for the pharmacist to make,—it was all the more necessary for the druggist to embrace every opportunity to make money legitimately in his business. But he might do this and not sacrifice his ideals.

Mr. Scholtz said he thought the discussion had drifted far from the real proposition under consideration, viz: commercialism in the drug business. Referring to the statement by Mr. Kendall that in his city of 25,000 inhabitants they only had fourteen drugstores, he said that if the laws of the United States were similar to those in Germany, which practically established an apothecary-shop on the ratio of 1 to every 2,000 people, "we would all be ethical druggists." But, the situation was different in this country, and conditions varied with different localities. Referring to his own experience, Mr. Scholtz said that he had not even observed that there was not a place in Denver to get a decent glass of sodawater until his attention was called to it by someone else, and whether good or bad from an ethical standpoint, he went right at it, with the result that his soda business had grown from nothing at that time to \$100,000 a year at the present, as the total of the several stores the company conducted. At the time he embarked in business for himself the store with which he was connected was doing a business of \$16,000 a year, whereas his own business was \$22,000 the first year—because he had put in soda-water. The second year it was \$28,000, and it had continued to grow until it had now reached an amount which it took "six figures" to express. The reason of such remarkable growth was because they had "started something different, and supplied a demand."

Mr. Scholtz went on to draw a vivid picture of the contrast between the old-fashioned drugstore, "a place that made you sick when you went in it and sicker when you came out," and the "modern emporium of fashion, the progressive drugstore of today." Right or wrong, he said, this was what they were, and the druggist of today must meet the demands of the people of his community. Mr. Scholtz set his face firmly against the serving of luncheons in drugstores, however, and said he was going out of the business when it came to that. Recurring to his early days in the drug business, Mr. Scholtz said that the trouble with the man he had started out with was, that he was an old Philadelphia-College man, a German, indifferent to conditions as they existed, bent on following out his ideals, without regard to the public demand. He attributed the marked progress he himself had made to the fact that he took an exactly contrary view of the matter, and the fact that his energy was of a "different sort" from that of his first employer. He said he wished that all were pharmacists in the strictest

sense; that he himself had made all of the elixirs and fluid extracts of different kinds that Mr. Nitardy now made. He had prescription men now, who did nothing else but fill prescriptions. But the modern drug-store, in his opinion, could not ignore the public demand for other things in the drug-store than medicine.

Mr. Osseward said he wished to call attention to the mistaken idea that because a druggist ran a commercial business he could not be an ethical pharmacist. He had visited one of the stores of Mr. Scholtz a number of times, and he was satisfied that he ran a prescription pharmacy as good as he himself was running in Seattle, and he did nothing else. He disliked commercialism, and that was why he ran a prescription drug-store only; that Mr. Scholtz did not lose sight of the ethical side of pharmacy, although he ran a commercial store. He thought the idea that the two things were incompatible was ridiculous.

Mr. Kendall disavowed any purpose of intimating that a man who ran a commercial drug-store could not be an ethical pharmacist. The real point of discussion was, whether conditions were such that a man could run a strictly ethical drug-store, and yet go so largely into the commercial end of the business.

This discussion reminded Mr. Clayton of the story of the man who met a stranger on the street and asking him what his business was, elicited the reply, "My business is saving souls, but I dig ditches for a living." He thought this aptly applied to a lot of those whose business was pharmacy, but who had to sell other things for a living.

W. Bruce Philip, of Fruitvale, Calif., called attention to the fact that the example of the larger stores in successfully handling a number of side lines frequently had an injurious effect upon the smaller druggist, in leading him to follow suit, with the result that he did not carry sufficient stock of any one thing to make a success. His advice was to start out with a drugstore, pure and simple, and not put in a side line until it could be properly handled. Then, if it should develop that that line was a mistake, it should be eliminated. He had tried putting in a first-class assortment of candy, and had advertised it extensively; but when he found that the demand was not sufficient to justify it, he had cut it out. He thought it was a great mistake for the small stores to jump from one side line to another.

THE MEN WHO HAVE ARRIVED.

Every man that ever amounted to anything in this world had the habit of doing things alone, unaided and in new ways. He followed untrodden paths, struck off alone and boldly, without calling a meeting of all his friends to advise him. He learned to trust himself, to recognize his own thoughts as good thoughts, and to grasp an opportunity ere it was too late.—*Western Druggist*.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

REPORT OF THE HISTORIAN.

EDWARD KREMER, PH. G., PH. D., MADISON, WIS.

It was at its jubilee meeting in Philadelphia in 1902 that the American Pharmaceutical Association found sufficient leisure in its onward march to look backward. Not only were the exhibits of an historical character, but the occasion had arrived for the association to express a willingness to devote a small part of the time of each annual meeting to considerations of an historical character.

In order to put to a test the desire for reflection of the past and for permanent historical activity at the Philadelphia celebration, a committee was appointed to prepare a suitable program for the next year. The Council provided one session for the program of the Historical Committee at the Mackinac meeting in 1903. This meeting proved of sufficient interest to warrant the continuation of this arrangement for another year. The meeting of the Historical Committee at Kansas City in 1904 having proven the stability of the interest of those historically inclined, the Association granted permission to establish a regular section to be known as the Historical Section. Although no money is at stake in the matters presented to this section, although not even the glory of new discoveries attaches to the facts unearthed, this section has not only held its own, but the interest taken in its work has increased rather than diminished as one year's program succeeded another.

It is now ten years that your reporter has been closely affiliated with this new line of work on the part of the Association; for two years as Chairman of the Committee, and since the organization of the Section as Historian. When urged at Kansas City to accept the Chairmanship of the Section, your reporter positively refused to do so for the good of the Section and for the future of the work which it represented. The success of the Section has demonstrated that in this particular instance at least your reporter was right and that his good and well meaning friends were wrong.

For the good of the Section, your Historian now desires to state that under no circumstances will he consider a re-election. Not that he has lost interest in the work, nor that at any time he has had even a suspicion of misunderstanding with his associates. For the good of the cause, however, he desires to express certain views to which he could not give expression if re-elected.

All members of the A. Ph. A. who have the welfare of this Association and of American pharmacy truly at heart have at all times revealed an unselfish willingness to put their shoulder to the wheel and also to put their hands into

their pockets so far as their means permitted. Hence we accept without hesitation the gift of time, energy and money bestowed by temporary officers of the Association at large, also of the sections. However, when it comes to those officers which are regarded as more or less permanent, we feel that we have no right to accept year in year out such gifts which, in the long run, could not be regarded as gifts but as sacrifices.

Like the officers of General Secretary, Treasurer, Reporter on the Progress of Pharmacy, and Editor of the Journal, that of Historian should be an office filled by the Council. Ex-officio the Historian should be an associate of the temporary officers of the Historical Section. Two years ago the Historian was made ex-officio a member of the Council. The time seems opportune for taking the second step in the right direction and to make him an officer of the Council.

As a permanent officer of the Association, the Historian should attend each and every annual meeting unless prevented by sickness or other unforeseen circumstances over which he has no control. It is not right, however, to expect him to attend these meetings at his own expense year in year out. The Association may not be in a position to offer the Historian an honorarium, much less a salary, but it should not accept for an indefinite period his services from one end of the fiscal year to the other and then not even offer to pay his traveling and hotel expenses while in attendance upon the meeting as one of the permanent officers.

Before making these remarks, I made the statement that I desired to make them because I had the future of the historical work, at heart. Permit me not only to repeat these words, but to add that what little I have been able to do and give during the past ten years has been given most cheerfully. Indeed I should like to continue in the same course, did I not feel that the office of the Historian should not be made light of, if it is to command the respect of this Association.

The American Pharmaceutical Association was the first to establish an Historical Section. In the establishment of this Section and its progress during the first decade of its existence I have naturally taken some pride. Much as I may regret to sever my official connection with the same, I feel that the time has come when its future and that of the Historian of this Association should be made secure. That I shall always continue to take a personal interest in this section, it is needless to state.

Anticipating my retirement from office, and looking forward to the establishment of permanent quarters for the collection in connection with the National Museum at Washington, the Historian has for the past two years made a special endeavor to put into shape not only for shipment but for use many of the numerous documents received for the Archives of the Association. With but relatively little additional work, these can now be shipped to Washington or to such other permanent or temporary abiding place as the Association may direct.

With the kindest greetings to my numerous pharmaceutical friends who have come together at Denver, I sincerely regret that I cannot be with you at the present time.

SOME OF THE EARLY DRUG STORES IN VERMONT.

COLLINS BLAKELY.

BARRE.

Dr. A. E. Bigelow, a practicing physician of South Barre (born in Brookfield, Vt.), moved into Barre village and opened the first drug store there in 1850, located north of Reynolds' hardware store in the Mower building. He continued in business for ten years.

In 1860 Stillman Wood, then postmaster of Barre, opened a drug store and conducted the same for twelve years or more, or until 1872, when William A. Perry, having been appointed postmaster, bought out the Wood's stock, as he wanted the store room for his postoffice. Mr. Perry turned over the stock of drugs, etc., to W. A. Gladding, who conducted the drug business and assisted in the postoffice for nine years. Mr. Gladding then moved his stock to the present site of the Kendrick drug store and continued in business there until about 1905, when he sold to Mr. Kendrick.

Dr. A. E. Field came to Barre in 1871 and with his practice engaged in the drug business for seven years. Charles Smith bought his stock in 1878 and ran the store for fifteen or more years. Charles R. Denney succeeded Smith, and in 1898 A. E. Drown bought the store and is conducting it at the present time. About 1890 Mr. Kendrick, of Lebanon, N. H., the father of C. H. Kendrick, opened a well appointed drug store opposite the depot square. On the death of Mr. Kendrick, senior, several years thereafter, his son, C. H. Kendrick, moved the stock to the Miles block in 1898. In 1901 he sold out to Rickert & Wells; Mr. Wells is now the sole proprietor of a very successful business.

In 1902 Mr. D. F. Davis started a new store in the Morse block, just north of the depot square, and is conducting a good business there at the present time.

Barre may be called the boom town of Vermont, having since 1870 grown from less than 3000 to 10,734 in 1910, and maintaining five drug stores.

BARTON.

The Pierce store was established in 1852 by William Joslyn and Dr. J. F. Skinner. After a few years, Dr. Skinner sold out to Mr. Joslyn, who took his two sons, Ginne and Myron, into partnership with him, under the name of William Joslyn & Sons. They bought out a store in Colebrook, N. H., and conducted the two stores together. The father spent most of his time on the road selling drugs. E. F. Dutton, grandfather of F. D. Pierce, worked for the firm and bought them out in 1869. He continued the business until 1885 when the building was burned. H. C. Pierce, the father of F. D. Pierce, had served as clerk for several years, and after the fire bought what was left and moved across the street into a couple of rooms until the present building was completed and continued the business until his death in February, 1906. After his death, F. D. Pierce conducted the business, which he still continues. Myron Joslyn went to Boston and into the wholesale business with one of the con-

cerns that combined with the Eastern Drug Company, with which firm he is still connected.

BENNINGTON.

Mr. Serreno P. Peck engaged in the drug business in this village in 1849. I have been unable to learn whether he started the store at that time or bought out some one who preceded him. He died in 1859. Soon after, John Taylor Shurtleff came from Woodstock, and with the help of Mr. Chapman, an old druggist in his home town, bought the store, Mr. Chapman being his partner for one year. Mr. Shurtleff then continued the business till his death in April, 1904, a period of almost unprecedented length. E. B. Hyde succeeded to the business and ran the store until he sold out to Mr. Thompson in 1909, who in the spring of 1911 sold to W. D. Cole, who is there now. Data as to the four other stores in Bennington I have not obtained.

BRANDON.

The first drug store in Brandon was established by Dr. Chauncy L. Case from Huntington, Vt., about 1850. H. D. Crooks, one of the original members of the old State Association, clerked for him from 1856 to 1859 and again in 1865-1866, before going to Montpelier October 1st of the latter year. Soon after Dr. Case started his store, he bought out all the drugs carried in the stores in that vicinity, except what was kept by Mr. Jackson, the postmaster. Dr. Case had several partners during his business career. The first was Charles Lyon from Schenectady; then Judson Chincy, who went to Colorado and died there. Incidentally, it may be stated that the Doctor at one time opened a drug store in Middlebury with a Mr. Ryder as partner. The late Dr. C. D. Boynton, who was killed a few years ago in the elevator shaft of Wells, Richardson Company of Burlington, was probably the third partner of Dr. Case, who later bought him out and took in Frank Manchester as a partner, the firm name being Manchester & Boynton. After Dr. Boynton went to Burlington, Manchester entered a partnership with Fred C. Spooner, under the name of Manchester & Spooner. Manchester died in 1893 and Spooner assumed full proprietorship of the business and is still running the store. In 1862 Robert Forbes opened a drug store in competition with Dr. Case and had for his second clerk the late A. W. Higgins, the long time popular druggist of Rutland.

George A. Crossman bought out Robert Forbes and ran a first class drug store for several years, and was succeeded by the late Z. B. Hopkins, formerly active and prominent member of the State Association. After the death of Mr. Hopkins, the store was sold to Barker & Evans; the present proprietor is Fred R. Barker.

In early life Dr. Case taught school, and later practiced medicine in Huntington. After coming to Brandon, he discontinued his practice and gave his whole time to the drug business. His wife, who survived him several years, was a great help to him. She and her mother used to do much work for the store—made syrups, washed all the bottles in soap suds, then rinsed them in cold water. They made roll salve at the house and spread plasters, boxed etc. Dr. Case greatly enjoyed a joke and was very musical. He played what

organ at the Baptist church and used to have young Crooks, his clerk, go and pump the organ for him. He was a great admirer of Shakespeare and was accustomed to invite people to his house to take parts in reading the great author's works.

His motto in the store was painted on the walls for the boys' benefit: "A place for everything, and everything in its place." Each boy was assigned his particular tasks, and was obliged to do them. Dr. Case would have the boys make putty, mix different colored paints and strain them, and so have them ready for sale by the quart. He would send young Crooks out into the woods to get elm bark, and black cherry bark for bitters that he made. He made everything in the store that it was possible to make, saved every bit of string and paper, bought old newspapers to wrap goods in. He was a strict and rigid disciplinarian. He would not allow his boys to sit down a moment during the day and would remark, "We can not work when sitting down." I think he might well have added that we could not present a good appearance or render the best service when smoking during business hours. But smoking was not then so much of a habit with drug clerks as at present. His store must be open as soon as six-thirty in the morning, but closed early at night and did not keep open Sundays. He kept a list of every article in stock and went to market often. He did not believe in holidays of any kind—thought them a loss of time. He appreciated the services of his boys and advanced their pay when he thought they deserved it. He was very careful to serve all customers alike and was strictly and absolutely honest. He was wont to say that a person must do lots of things for no pay and said he would rather give an old lady five cents' worth of snuff than put an advertisement in the newspaper. He was always as ready to praise as to censure. As a discipline and test of a steady nerve in pouring any ingredient from one bottle to another, he would have his clerks hold points of pins together to see how accurately it could be done. It was his practice to keep many things weighed out, ready for customers when called for. Paregoric and all essences were largely kept in bottles ready for immediate delivery. These were frequently sold to peddlers at wholesale. His boys were always kept busy at something and he generally had from three to five working for him, whose aggregate pay did not probably equal that of a good registered clerk of the present day. I am informed of one worthy clerk who started in with the Doctor at \$6.00 per month and boarded himself. But at the end of the year, the Doctor presented him with \$15.00, five dollars of it for not putting up anything wrong, and ten as a reward for faithfulness. At one time the Doctor in company with Dr. O. G. Dyer went into the grape business quite extensively and made some quantities of wine, but it did not prove profitable and was given up. Dr. Case was the first President of the old State Pharmaceutical Association. He was a brainy man and a good talker and debater at the meetings of the Association. He died in 1883, leaving a good property as one result of an energetic active life.

For the foregoing in regard to Dr. Case and the Brandon stores, I am deeply indebted to Mr. H. D. Crooks.

Joslyn

BURLINGTON.

Dr. J. Peck, father of T. A. Peck and grandfather of Gen. T. S. Peck, started the first store early in 1806. He practiced medicine and ran a little store in connection with his practice. His son, T. A. Peck, took the business in 1839 and in 1840 formed a partnership with A. C. Spear. The store was refitted by them and was acknowledged to be the finest equipped store north of Boston. And it has also been reliably said to have been the most elegant store between New York and Montreal. Gen. T. S. Peck tells me that as a boy one of his duties in his father's store was to polish the marble and clean the enamel and gold of any dust or fly specks.

The front store was finished in white enamel, blue, and gold, with a marble floor (white and black) and a soda fountain, an old fashioned two arm apparatus, a great novelty in those days. The store must have been quite popular, as one drawer was devoted to tickets for the Whigs of '46. The firm of Peck & Spear was dissolved after a few years and T. A. Peck ran the store until 1861, when J. W. Roby, a clerk in the store, bought the business. In 1870, at the death of J. W. Roby, R. B. Stearns and A. C. Tuttle formed a partnership and bought the store, continuing in partnership for twenty-five years. In 1895 A. C. Tuttle retired from the firm and was succeeded by W. J. Henderson, who had been with the firm for twenty-one years. The partnership was dissolved in March, 1899, Mr. Henderson succeeding to the business. In January, 1907, Mr. Henderson retired, the firm of W. J. Henderson & Company continuing the business.

The fittings in the old store put in by Peck & Spear were in use from 1840 until the spring of 1875, when the lowering of the street necessitated the lowering of the floors four feet, and the store was then refitted with the present furnishings. The old store was fitted with a boiler for making syrups, copper still, large mortar and pestle, the latter working with a large stick which acted as a spring, so the arm of the apprentice would not get tired when he was making blue ointment, or blue mass. Everything was made in those days. The only pills in stock as late as 1874 were Bullock & Crenshaw's, and few kinds at that, and they might easily be used for bullets. Decoctions and infusions were brewing all the time and plasters were spread daily. In the old store castor oil had to be filtered or strained through a flannel filter. In the back of the store was a large cherry box containing a flannel filter; this was kept full of castor oil which dropped into a receptacle below, from which the dispensing bottle was filled. Herbs and roots were bought from country people who made a business of collecting them. *Picra* was kept "brewing" all the time and Elixir Pro and Thompson's Hot Drops were in great demand. This store for sixty-five years was the only store in the state dealing in surgical instruments. The old sign read "Dealers in Surgical Instruments, Leeches, and Genuine Patent Medicines."

For years there were only two stores in Burlington and no stores nearer than St. Johns, Canada, until Dutcher started a store in St. Albans. Why this proprietor failed to become wealthy is a mystery; in fact, A. C. Spear told Mr. W. J. Henderson one day that he thought they were contented with what

business they did and did not look for more. Here is an illustration of the way business was done here.

Back of the store were two large storehouses and a large back yard; all the surrounding country came here to trade and the back yard was constantly filled with four horse teams. The drivers of these teams did the shopping for their section. One of these, a boy, came into Peck's store and said he had a long list of wants. Mr. Peck came out to wait on him. The driver, before he gave his order, wanting to expectorate, looked all around for a spittoon, and finally spat on the marble floor. Mr. Peck, who was a very active man, jumped over the counter, took the boy by the ear and walked him out of the store. That ended his business with the store.

Dr. John Peck came to Burlington in 1804 from Woodbury, Connecticut. I append a partial copy of an advertisement by J. Peck & Company dated May, 1806:

J. Peck & Co.		
At the sign of the mortar.		
North side Court House Square, Burlington.		
Have just received for sale, at reduced prices an extensive assortment of		
Fresh Imported		
Drugs and Medicines.		
Dye-Stuffs, Dye-Woods, Paints, Oil, etc.		
Among which are the following articles, viz.		
	Drugs and Medicines	
Camphor, Opium	Peruvian Bark	Manna, Musk
Salt Peter, Mace	Rhubarb. Salts	Jalap, Ipecac,
Flowers Camomile	Cream Tartar	Colombo Root
Etc.	Etc.	Etc.
	Patent Medicine	
Anderson & Hooper's Pills	Godfrey's Cordial	Ching's Worm Lozengers
Bateman's Drops	Balsam of Life	Stoughton's Bitters
Church's Cough	Steers Opodeldoc	Scott's Liquid Blue
Etc.	Etc.	Etc.
	Dye Woods & Dye Stuffs	
Fustic, Madder	Copperas, Allum,	Otter, Indigo
Camwood etc.	Blue Vitrol	Nut Galls
	Paints, Oil, Etc.	
Vermilion	Ivory Black	Litharge of Gold
	Sundries	
Essence of Spruce	Surgeon's Pocket & Teeth	Breast Pipes, etc.
	Burlington, May, 1806.	

MONTPELIER.

Mr. Edward Prentiss, son of Hon. Samuel Prentiss, former U. S. Senator from Vermont, started the first drug store in Montpelier some time prior to 1838, in the old Langdon building, corner of State and Main streets. the store being on the Main street side. The exact date I have been unable to ascertain; but at the above mentioned time the store was bought by Salvin K. Collins and Dr. Charles Clark, the latter a practicing physician in Montpelier at that time and of considerable note. Not long thereafter, Dr. Clark withdrew from the firm and Mr. Collins conducted the business till 1853, when he sold to Col. Fred E. Smith. The main reason why Mr. S. K. Collins gave up the drug business was his constant uneasiness lest some fatal mistake might be made in compounding prescriptions, he being of a very sensitive nature.

One of the early clerks of F. E. Smith was J. V. Babcock, now a retired druggist residing in Montpelier. Mr. Smith successfully continued the business

till the outbreak of the war, when he enlisted and sold to N. K. Brown, for many years past a resident of Burlington. Mr. Brown did a large business and became the proprietor of Brown's Bronchials, Brown's Teething Cordial, Brown's Essence of Jamaica Ginger, etc. In 1869 he sold to Dr. J. B. Woodward, a skillful practicing physician who had recently returned to his home state from Kansas. In June, 1870, Collins Blakely, having sold his drug store interest in Waterbury, entered into partnership with Dr. Woodward and a few months thereafter bought out the Doctor, and since that time has managed the store in the effort to earn an honest living for his family, now consisting only of himself and son. During this period of forty-two years, four of his clerks have owned and conducted drug stores in Montpelier, the valued Secretary of the Vermont State Pharmaceutical Association, W. E. Terrill, being one of this number. Mr. Blakely was one of the original first five members of the Board of Pharmacy, receiving his appointment from Governor Woodbury in 1894 and by successive re-appointments, continued on the Board for eight years, laboring to advance and elevate the professional standing of pharmacy in Vermont.

The original Board of Pharmacy was constituted as follows:

A. W. Higgins, President.
F. D. Pierce, Treasurer.
Collins Blakely.
C. C. Bingham.
J. G. Bellrose, Secretary.

About 1855 Levi F. Pierce and S. Mortimer Collins, son of Salvin K. Collins mentioned above, opened a drug store where the Slade store is now situated. Mr. Pierce was previously a clerk in the Collins store. He continued in the business till his death in 1862, when the store passed into the hands of Freeman Bixby and Col. C. B. Wilson and later H. R. Bixby, who was succeeded by Harry A. Slade. Mr. Slade now carries on the business.

J. V. Babcock and M. M. Cutler opened a store in November, 1868, under the name of Babcock & Cutler and continued until November, 1880, when Cutler withdrew. Babcock sold to W. E. Terrill September 8, 1892, and he in 1902 to Geo. E. Megrath.

S. P. Redfield opened a drug store in Montpelier not far from 1839. Not long after, Mr. Redfield formed a partnership with Dr. Tyler and continued the same for several years. When Dr. Tyler retired, H. D. Crooks from Brandon entered into partnership with Mr. Redfield under the firm name of Redfield & Company. This was in October, 1866. Mr. Crooks was a well posted druggist. This firm was continued until 1873 when the store was sold to Frank H. Bascom, who conducted this business till just before his death in 1890. Lester H. Greene of Syrup of Tar fame succeeded and conducted the business till March, 1901, when he sold to W. E. Poole, who in turn sold to L. C. Rivers, in 1910, who now conducts the store.

NORTHFIELD.

The Sanborn Store was established by Geo. Nichols in 1854. Nichols and Williams, 1866 to 1881. George Nichols, 1881 to 1893. Nichols and Sanborn from 1893 to 1898. George C. Sanborn, 1898 to date. George C. Sanborn

began to clerk with Nichols & Williams in 1878. Dr. Nichols was a prominent and efficient man and interested in public and state affairs. He held the office of Secretary of State for many years, and was an excellent presiding official at the joint assembling of the Legislature on the opening of the session.

The N. C. Ray & Company store was established by Dr. Edwin Porter in 1854, continued to 1894 and then sold to J. H. Judkins. J. H. Judkins from 1894 to 1909. N. C. Ray & Company since 1909.

PAWLET.

Charles W. Potter, of Pawlet, an early time druggist, was born in 1818 in Wells, Vt., but when quite young moved with his parents to Pawlet, the southwest corner town of Rutland County, bordering on the state of New York. His grandfather was captain of a trading vessel to the West Indies from New London, Conn. Joshua Potter, his father, was a physician of much note, having the largest practice in the vicinity of many miles. So great was the demand for his professional services, that he was on the road nearly all the time visiting his patients. Charles, his son, obtained a common school education, was a bright, intuitive scholar, and as a boy was always dabbling in chemistry. He invented the first matches that any one in the town ever saw—the match was lighted by dipping it in a vial containing some kind of solution. I have not been able to learn its component ingredients. He also invented another contrivance for producing fire. A piston rod was wound with paper, into which he poured melted lead, thus forming a lead pipe or tube; the rod suddenly plunged down ignited a piece of punk. He also made packs of cards.

At sixteen years of age, in 1834, he started a drug store in Pawlet village. He had studied medicine with his father, and had also earned and saved a little money by working in the "Factory Street" store a half mile from the village, owned and operated by the Pawlet Manufacturing Company, whose large three-story brick factory for making cotton cloth was located near by. The store and factory were torn down many years ago.

As an adjunct to his drug business, Mr. Potter painted signs, especially store signs, being very skillful in this line of work. However, in a short time he practically failed financially, but started again in the room under his brother Fayette's law office fronting across the street, and here for many years he did a large and thriving trade in handling drugs. He furnished medicine for all the doctors in many towns round about. Granville, N. Y., only six miles distant, was without a drug store until 1852 when the railroad first passed through the town; but now, a village of four to five thousand population, it has three well equipped stores. Before the building of the railroad it was not as large as the village of Pawlet. Mr. Potter had a monopoly of the drug trade covering a very large and good farming territory. His trade extended as far as and including Manchester on the south, a distance of fifteen miles, and to Poultney on the north, and nearly as far to the east and west. His knowledge of drugs and chemicals and their medicinal virtues and properties was thorough and accurate, and this combined with his intuitive perception, judgment and skill, secured for him the confidence of physician and a large public patronage. He installed a small soda fountain

in his store with much success, having made a net profit therefrom of over \$400 the first year. In course of time he bought out a general store across the street from his place of business and moved his stock of drugs thereto. Mr. Potter retired from mercantile life about 1867 and built a commodious summer hotel on the southern shore of Lake St. Catherine in Wells, and conducted the same for about ten years or more, when he moved to Poultney where he lived perhaps a dozen years. His physical condition then becoming somewhat impaired, he removed to Los Angeles, California, for his health, and died there three years later, in 1905, aged about eighty-seven years.

RICHFORD.

The earliest date at hand of any drug business in this place is 1850, when Mr. A. W. Sears started a general store and kept a small stock of drugs and dye stuffs. But very little in this line was done till 1865, when Richard Smith bought out the Sears stock and moved it to a new building he erected. On the Mitchell corner has been the leading drug store since that time, over forty-six years. During several years a large part of the business was in crude dye stuffs, indigo, madder, logwood, catechu, cochineal, etc. Aniline dyes were then unknown and many of the people wore home-made clothing. These dyes were all purchased in bulk and the clerks had something of a task in weighing and putting them up. In many things the modern drug clerk has but slight conception of the work of a drug store of three score years ago.

In 1883 F. W. Mitchell bought the Sears business and built a fine new store in 1902, and is carrying on a good drug trade at the present time.

SPRINGFIELD.

A drug store was first started here by Charles Sabin in 1849. Mr. W. H. Wheeler from Fitzwilliam, N. H., was his partner beginning in 1852. In 1855 the firm name was F. W. Porter & Company. In 1873 Mr. W. H. Wheeler was sole proprietor, but for a number of years past, the firm has been W. H. Wheeler & Son. Mr. Wheeler is a very active man, has been for sixty years behind the counter and, to use his own expression, is "still at it." He is now eighty years old and works a whole day; not the day of the average drug clerk, but much of the time from six o'clock in the morning till 11 o'clock at night. In length of service, this is probably not equalled by any one in this state.

ST. ALBANS.

The Dutcher drug business, the first one in Vermont north of Burlington, was established in 1841 by L. L. Dutcher, who conducted it alone until 1843, when he took in his son, Frederick, under the firm name of L. L. Dutcher & Son. In 1858 the firm was again changed by the addition of another son, Daniel, and that concern, L. L. Dutcher & Sons, continued until 1874, when it was succeeded by Frederick, who carried on the business alone for six years. In 1880, A. L. Dutcher, son of Frederick, entered the business which was continued under the name of F. Dutcher & Son until 1885, when F. L. Dutcher, another son, was taken into the partnership under the firm name of F. Dutcher & Sons.

In 1892 the business was incorporated under the laws of the state of Vermont as the Fred'k Dutcher Drug Company, and has so continued until this time.

The Dutcher's Lightning Fly Killer was the first one ever made; it was started in 1858, the solution being made in a ten gallon farmer's kettle. At that time the sales of a season would amount to no more than what has been sold in a single day many times since.

Daniel Dutcher, son of L. L. Dutcher, owned and conducted a drug store for quite a number of years. There are in all five drug stores in St. Albans at the present time, but I am not able to give dates of their establishment.

ST. JOHNSBURY.

In 1845 J. C. Bingham bought of a dispensing physician, Dr. Luther Jewett, his stock of drugs and opened the Bingham drug store in St. Johnsbury. After moving two or three times, in 1855 he built a block on Main street, on the site of the present Sanborn Block, where the Masonic Hall is now located. This he occupied till 1870. At this time he moved into a new store built by himself on Main street in the brick block opposite the St. Johnsbury House, on which site the business has since been located. Mr. Bingham died in December, 1870, leaving two sons to succeed him; these were Charles C. and Henry M. The business was conducted under the name of Bingham Brothers for about two years, when on the death of Henry M., Charles C. succeeded to the business, and has conducted the store successfully since that time—for forty years—making a record of sixty-five years in the Bingham name. Charles C. has no sons, so the Bingham store must cease to do business under that name in a few years. C. C. Bingham was one of the original members of the Board of Pharmacy and held and honored that position for about ten years.

The Randalls have been out of the business for a good many years. Flint Brothers are conducting a good store of long standing. Others in the drug business at present are W. B. Eastman, who is always in attendance at the State Pharmaceutical Association meetings, F. G. Landry, and C. A. Searles & Company. I regret that owing to pressure of time, I have not data relating to these stores.

VERGENNES.

Fordyce Huntington, a son of Dr. Ebenezer Huntington, was for many years a merchant and druggist here, keeping dry goods on one side of his store and drugs and candies on the other side. I do not know the date of his establishment in business. He died in 1869, and was succeeded by John E. Young, who had been his clerk for many years. Mr. Young continued as a druggist until his death in 1882, when his brother, D. R. Young, succeeded him. The business was discontinued after a fire destroyed the block in which was Mr. Young's store.

Another drug store was started by a Dr. Sprague, followed by Walter G. Sprague, his nephew, who died in 1884. Other proprietors were Julius A. Hickok, Charles Dennison, D. H. Murphy & Co., and many others.

T. Neville started in business here in 1886, occupying the same store until 1907 when he moved into a larger store.

Mr. W. R. Warner has been in business about eighteen years, and besides

being a thorough druggist, is quite a politician, being a member of the Public Service Commission at the present time.

WATERBURY.

The drug business in Waterbury was started about the year 1855 by James M. and John F. Henry, and in 1857 William W. came from Colorado and joined the others, the firm name becoming J. M. Henry & Sons. Next it was J. F. Henry & Co., then Henry, Johnson & Co., then Henry & Co., afterwards E. D. Scagel, Scagel & Fales, Burleigh & Frink, Blakely & Frink in 1869 and 1870, then Bennington & Frink, M. O. Evans & Bryan, and at the present time, January, 1912, G. C. Rocheleau.

Dr. Fales and Dr. Frink of the above named firms were practicing physicians, the former having an extensive practice. It was said of William W. Henry of the above Henry firms, that at the time Charles Dillingham was raising Company D. of the Second Vermont Regiment, that he became so patriotic and anxious to help his friend raise his company that he left the safe and store unlocked, and in three days the company was filled. Dillingham was elected Captain and Henry First Lieutenant. They were lucky enough to take part in the first battle of Bull Run. Henry was afterward Major, Lieutenant Colonel, and Colonel, and Brevet Brigadier General. J. M. Henry died in 1863, John F. went to New York and became for a time the patent medicine king of the country. He died a dozen or more years ago. William W. is living in Burlington, hale and hearty at eighty. The Henry firm was noted as being the proprietors of Down's Elixir, a cough and cold remedy which they purchased of the Rev. N. H. Down, who originated and manufactured the remedy on one of the back hills in the town of Westfield, Vermont.

Contributed and Selected

ASH AND MOISTURE CONSTANTS OF POWDERED VEGETABLE DRUGS.

AZOR THURSTON AND A. N. THURSTON, GRAND RAPIDS, OHIO.

Some time ago we published¹ an article under the above title. The results reported were obtained by analysis of commercial samples.

The great variation in the ash of a number of the powders lead us to believe that this line of drugs was grossly adulterated, therefore we ordered from two well known drug millers samples of the best grade of their products. They were informed for what purpose we wanted the drugs and no doubt they furnished as near pure articles as were obtainable. The wide variation as shown by the results of analysis would certainly indicate that even the best obtainable drugs will vary greatly.

Determinations as here reported are as follows—moisture, ash, water soluble ash, water insoluble ash, alkalinity of water soluble ash and alkalinity of water insoluble ash.

In every case exactly 2 grams of the sample were used for the determinations. The amount reported as water or moisture includes all the volatile portion at 100° C. The ash was obtained by incinerating the dried solids. In case of incomplete combustion of the carbon a few drops of water was added to the ash and evaporated to dryness on a water bath, then again brought to a red heat. This treatment worked fully as well as the customary method of "leaching out" and with less chance of error.

The alkalinity of ash is represented as the number of cubic centimeters of decinormal acid required to neutralize the ash from one gram of the sample Methyl orange being used as indicator.

With one exception the drugs reported are official in the U. S. P. VIII. *Belladonna Leaves* is the only one that has U. S. P. official ash standard and the samples analyzed gave 12.78 and 14.43 percent ash which comes well within the standard of 15. *Hydrastis* gave 5.44 and 10.99 percent ash while four² foreign pharmacopœias have a standard of 6 percent ash.

¹Proceedings Ohio State Pharmaceutical Association, 1911, page 69.

²Jr. A. Ph. A., Vol. I, page 457.

					Alkalinity of Ash			LaWall and Brad- shaw
	H ₂ O	Sol. ash H ₂ O	Ins. ash H ₂ O	Ash Total	H ₂ O Sol.	H ₂ O Insol.	Total	
Aconite Root (Aconitum)	10.77	.86	3.47	1.33	1.19	2.82	1.01	1.0
Napellus	10.15	1.22	3.43	1.65	1.15	1.80	2.35	
Arnica Flowers	11.42	3.08	6.95	10.03	2.29	5.28	7.57	7.4
Belladonna Leaves	8.52	2.90	5.54	8.44	1.8	4	5.8	
Belladonna Root	13.10	6.88	5.90	12.78	7.26	4.30	11.56	13.2
Black Haw Bark (Viburnum Pronifolium)	7.65	6.31	8.12	11.42	6.55	1.65	11.20	
Black Cohosh Root (Cimicif- fuga)	9.30	3.10	1.11	7.21	3.3	2.3	5.6	
Blackberry Bark of Root (Rubus)	8.47	.36	11.16	11.52	.88	6.15	7.03	7
Blood Root (Sanguinaria)	9.54	.54	9.61	10.15	9	4.1	5.3	
Boneset Herb (Eupatorium)	12.38	1.89	2.98	1.87	2.35	2.89	5.24	9.0
Broom Tops (Scoparius)	9.49	.28	7.29	8.51	1.55	1.8	3.35	
Blackberry Bark of Root (Rubus)	9.78	.83	3.12	3.95	1.97	3.84	1.91	7.7
Blood Root (Sanguinaria)	10.40	.71	4.26	1.97	1	2.8	3.8	
Boneset Herb (Eupatorium)	10.69	1.56	3.03	1.69	1.47	3.13	4.60	4.77
Broom Tops (Scoparius)	8.79	2.56	1.61	7.17	2.65	1.8	4.45	
Blood Root (Sanguinaria)	9.12	2.54	5.61	8.15	1.88	7.71	9.59	7.7
Broom Tops (Scoparius)	8.10	2.30	1.55	6.85	1.35	3.45	4.80	
Blood Root (Sanguinaria)	8.60	.94	1.07	2.01	1.08	1.65	2.73	
Blood Root (Sanguinaria)	7.95	.98	2.67	3.65	.95	1.95	2.90	
Blood Root (Sanguinaria)	11.12	1.29	4.51	5.80	1.27	1.28	5.53	4.62
Blood Root (Sanguinaria)	5.55	.08	4.86	4.94	1.5	1.8	3.3	
Blood Root (Sanguinaria)	7.73	.27	6.13	6.10	1.52	1.69	6.21	4.2
Blood Root (Sanguinaria)	6.72	.58	5.92	6.50	1.35	1.25	5.80	
Blood Root (Sanguinaria)	12.36	2.56	3.72	6.28	2.33	2.74	5.07	8.67
Blood Root (Sanguinaria)	11.55	1.70	7.79	9.49	1.2	3.1	4.3	
Chamomile Flowers (German)	9.37	2.75	16.30	19.05	1.35	4.05	5.40	10.66
" " Hungarian	13.48	3.83	7.82	11.65	2.08	4.89	6.97	
" " Roman	11.78	2.55	3.12	5.67	1.80	3.08	4.88	5.12
Colchicum Corm	8.45	2.48	3.97	6.15	1.25	2.85	4.10	
Colchicum Corm	9.77	.98	1.67	2.65	1.11	1.54	2.68	2.25
Colchicum Corm	8.58	1.06	3.61	4.67	.7	1.85	2.55	
Cotton Root Bark	8.71	1.81	2.79	4.60	2.06	3.73	5.79	5.2
Cotton Root Bark	10.71	1.94	4.49	6.43	1.8	3.1	4.9	
Couch Grass (Triticum)	8.24	1.17	1.06	2.53	.96	.55	1.51	3.31
Couch Grass (Triticum)	7.96	.64	12.83	13.47	0.35	1.4	1.75	
Cramp Bark (Viburnum Opulus)	7.78	.68	2.94	3.62	1.40	3.43	4.83	3.35
Cramp Bark (Viburnum Opulus)	6.87	.49	3.49	3.98	1.1	2.8	3.9	
Cranesbill Root (Geranium)	10.39	.91	6.58	7.29	.74	8.10	8.84	6.4
Cranesbill Root (Geranium)	9.5	.84	9.26	10.10	1.55	7.6	9.15	
Coca Leaves	12.12	2.62	6.33	8.95	1.26	10.77	12.03	10.6
Culvers Root (Leptandra)	9.75	.30	11.67	11.97	.30	2.53	2.83	9.1
Culvers Root (Leptandra)	6.61	.28	30.11	30.39	.25	3.25	3.50	
Dandelion Root (Taraxacum)	13.76	1.59	3.83	5.42	1.03	2.31	3.34	
Dandelion Root (Taraxacum)	10.50	.83	5.14	5.97	.45	2.75	3.20	
Elm Bark (Ulmus)	8.64	1.48	6.04	7.52	3.19	10.10	13.29	9.7
Elm Bark (Ulmus)	8.95	.99	11.25	12.24	2.85	9.70	12.55	
Foxglove Leaves (Digitalis)	8.06	3.93	3.20	7.13	4.60	2.60	7.20	8.1
Gelsemium Root	9.52	.52	1.95	2.47	.63	1.12	1.75	1.4
Gelsemium Root	8.28	.10	2.22	2.26	.5	1.7	2.2	
Gentian Root	12.45	.35	2.89	3.24	.69	2.69	3.38	2.6
Gentian Root	12.41	.16	5.26	5.42	.3	3.13	3.43	
Golden Seal Root (Hydrastis)	10.52	1.97	3.47	5.44	.64	3.63	4.27	9.15
Golden Seal Root (Hydrastis)	8.88	1.37	9.12	10.99	.2	3.7	3.9	
Hops (Humulus)	9.11	2.96	6.74	9.70	1.65	8.05	9.70	
Hops (Humulus)	3.77	3.38	6.75	10.13	1.04	2.04	3.04	
Horehound Herb (Marrubium)	10.89	4.67	9.05	13.72	5.12	6.02	11.14	22.8
Horehound Herb (Marrubium)	10.97	4.12	15.37	19.49	4.6	7.25	12.15	
Hyoseyamus Leaves	11.25	1.95	13.62	17.67	2.52	14.95	17.47	
Hyoseyamus Leaves	6.69	2.50	29.04	31.54	1.1	8.35	9.45	
Jaborandi Leaves	7.13	1.13	5.12	6.85	1	1.9	2.9	4.8
Ladies Slipper Root (Cypripedium)	9.67	.65	9.91	10.29	1.14	2.75	3.89	
Ladies Slipper Root (Cypripedium)	1.02	.46	31.32	31.78	.3	2.05	2.35	
Lobelia Herb	9.3	2.45	5.82	8.28	2.46	5.48	7.94	11.67
Lobelia Herb	8.21	1.82	7.77	9.59	1.8	3.8	5.6	
Male Fern (Aspidium)	10.7	.75	1.69	5.14	1	.95	2.69	3.0
Mandrake Root (Podophyllum)	11.07	1.41	1.61	3.02	4.10	1.79	2.69	3.0
Mandrake Root (Podophyllum)	10.45	1.22	1.44	5.26	1.2	1.95	3.15	
Marigold Flowers (Calendula)	11.72	1.75	1.41	8.86	3.88	3.49	7.37	7.9
Marigold Flowers (Calendula)	9.41	3.13	6.48	9.61	2.15	2.2	4.35	
Marshmallow Root (Althaea)	11.81	2.28	2.77	5.45	1.17	3.00	4.20	5.4
Marshmallow Root (Althaea)	9.16	.22	7.09	7.31	.75	4.15	4.90	
Matico Leaves	6.58	3.35	15.84	19.19	2.39	6.98	9.37	16.4
Matico Leaves	7.78	.3	11.58	14.58	2.5	3.95	6.45	
Mezereum Bark	9.74	1.03	2.72	3.75	1.25	4.29	5.54	3.8
Mezereum Bark	8.11	1.17	1.12	2.59	1.7	3.05	4.75	
Pareira Brava Root	9.49	.78	5.46	5.46	5.67	6.77	6.77	2.8
Pareira Brava Root	7.87	1.02	8.88	9.90	.65	1.45	2.1	
Pellitory Root (Pyrethrum)	7.12	2.13	2.56	6.69	2.04	2.85	1.89	6.7
Pellitory Root (Pyrethrum)	10.10	1.86	1.20	6.06	1.85	3.65	5.50	
Pennyroyal Herb (Hedeoma)	9.48	3.08	7.93	11.04	2.60	5.45	9.05	16.9
Pennyroyal Herb (Hedeoma)	8.10	2.10	7.24	9.34	2.4	1.45	6.55	
Peppermint Herb	9.99	5.47	6.39	11.86	4.42	6.42	10.84	10.0
Peppermint Herb	8.76	4.62	8.1	12.72	1	6.25	10.25	
Pink Root (Spigelia)	11.02	1.44	6.49	7.93	1.24	1.91	3.15	
Pink Root (Spigelia)	8.28	.60	29.42	30.02	.25	3.5	3.75	
Pipsissewa Leaves (Chimaphila)	7.98	1.03	3.14	4.17	1.23	1.56	2.79	3.1
Pipsissewa Leaves (Chimaphila)	8.96	.84	5.81	6.67	1	3.75	4.75	

	H ₂ O	H ₂ O Sol. ash	H ₂ O Ins. ash	Total Ash	Alkalinity of Ash.			LaWall and Bradshaw
					H ₂ O Sol.	H ₂ O Insol.	Total	
Poke Root (Phytolacca).....	13.15	6.22	3.31	9.56	7.61	2.43	10.04	11.1
	12.39	6.8	6.23	13.03	8.7	3.05	11.75	
Pomegranate Bark.....	7.1	1.32	14.45	15.77	.83	19.60	20.43	
	10.64	.54	12.45	12.99	2.2	18.5	20.7	
Prickley Ash Bark (Xanthoxylum).....	10.27	.54	7.82	8.36	1.95	6.09	8.04	5.
	8.24	.93	5.25	6.18	2.	2.2	4.2	
Sage Leaf (Salvia).....	8.23	2.60	5.41	8.04	2.83	7.88	10.71	6.69
	8.12	2.16	6.62	8.78	2.5	7.2	9.7	
Sarsaparilla, Honduras.....	9.47	1.87	2.83	4.70	1.12	3.07	4.19	
	8.19	1.07	12.96	14.03	.4	1.5	1.9	
Mexican.....	7.45	1.77	12.45	14.22	.47	3.61	4.08	
	7.45	1.5	33.07	34.57	.45	3.85	4.3	
Sassafras Bark.....	9.87	.78	2.85	3.63	.69	1.71	2.4	4.15
	1.81	.33	13.38	13.71	.2	1.5	1.7	
Savine Tops.....	7.74	.86	6.68	7.54	1.41	9.53	10.94	
	3.86	1.04	7.46	8.5	2.15	4.35	6.5	
Senega Root.....	7.69	.82	3.21	4.03	.55	1.69	2.24	5.05
	9.65	.42	3.88	4.3	.6	1.6	2.2	
Senna Leaves, Alexandria.....	10.56	2.15	7.29	9.44	3.	12.04	15.04	8.2
T. V.....	8.17	2.14	12.18	14.32	1.25	3.45	4.7	
Serpentaria Root.....	11.91	.75	16.04	16.79	.32	4.79	5.11	
	6.59	.65	36.54	37.19	.5	2.	2.5	
Soap Tree Bark (Quillaja)....	8.02	1.96	17.34	19.30	4.2	30.3	34.5	9.3
Spearmint Herb.....	9.49	4.89	6.24	11.13	4.44	7.96	12.4	9.7
	9.99	5.08	5.32	10.40	4.	2.3	6.3	
Stillingia Root.....	10.99	.99	4.43	5.42	1.11	5.10	6.21	
	10.19	1.28	5.57	6.85	.5	1.3	1.8	
Stramonium Leaves.....	11.12	1.29	4.51	5.8	6.67	6.1	12.77	18.81
	7.19	5.30	14.8	20.1	4.6	8.35	12.95	
Sweet Flag Root (Calamus)...	12.03	1.47	1.62	3.09	.87	1.74	2.61	3.5
	10.43	1.15	4.73	5.88	.5	1.35	1.85	
Uva Ursi Leaves.....	8.27	.72	2.66	3.38	.82	3.06	3.89	
	9.82	.58	6.43	7.01	.85	3.5	4.35	
Valerian Root, Belgian.....	8.04	1.01	17.42	18.43	.29	2.43	2.72	
" English.....	6.92	.94	30.32	31.26	.35	2.7	3.05	20.15
Wahoo, Bark of Root (Euonymus).....	11.24	1.41	8.75	10.16	1.54	6.33	7.87	11.1
	9.	.7	13.88	14.58	1.	4.2	5.2	
White Oak Bark (Quercus alba).....	8.86	.3	5.87	6.17	2.14	6.03	8.17	6.8
	9.37	.63	7.8	8.43	1.8	7.2	9.	
Wild Cherry Bark.....	9.09	.49	3.12	3.61	.97	4.68	5.65	3.4
	8.49	.71	6.86	7.57	1.6	2.1	3.7	
Witch Hazel Bark.....	7.66	.1	4.44	4.54	1.83	4.45	6.28	
	9.61	.45	5.29	5.74	1.3	4.7	6	
Witch Hazel Leaves.....	9.64	1.78	2.4	4.18	1.46	2.71	4.17	5.55
	9.62	.86	5.58	6.44	1.05	3.	4.05	

For comparison we have given in column eight the average ash of samples as determined by LaWall & Bradshaw.³

Lloyd⁴ in his classical work on hydrastis does not mention an ash standard. The ash as a standard of itself should not be considered in case of alkaloidal drugs like hydrastis, but it is of sufficient importance to add another constant when adulterations are so prevalent.

THE DISPENSING OF OILY SUBSTANCES.*

J. LEON LASCOFF, NEW YORK.

In presenting this subject to you I have borne in mind the fact that prescriptions submitted to us with oily substances are difficult to dispense in a form which shall be both elegant in appearance and have uniform distribution. I refer especially to mineral oils.

Oils of the hydrocarbon variety are not easily miscible with some ingredients: firstly, their tendency when standing is to separate themselves; secondly,

³Proceedings A. Ph. A., 1910, Vol. 58, pages 750-755.

⁴Lloyd's Drugs and Medicines, pages 76-184.

*Read before the Kings County Pharmaceutical Society, March 11, 1912.

a mineral oil is not a ready solvent for every drug and chemical. These facts need to be taken into consideration more now than ever before, as prescribers are using them more frequently and manufacturing concerns are bringing out new refinements of oil almost daily; each bearing another trade name and almost all differing in their solubility and absorbing qualities.

I shall demonstrate by illustration later on how some of these prescriptions look very simple and show no evidence of any difficulty on their face.

For many years *Liq. Petrolatum* of the U. S. P. was the standby of the prescriber and was the only hydrocarbon oil that entered into the usual prescriptions for atomizing purposes and for oleaginous applications. It was prescribed in combination with Menthol, Thymol, Eucalyptol, *Ol. Eucalyptus*, *Ol. Pini Sylv.* and *Ol. Pini Pomilionis*.

Then the more refined and purer petroleum oils such as Albolene, Benzonal, or Glymol, etc., were added to the therapeutic list.

Other hydrocarbon oils are prescribed under the following names: Paraf. Liquidum, Mineral Glycerin, Glycolene, Russian Oil, (a statement was made by a certain physician of the West Side that when he prescribed Russian Mineral Oil, in each case the pharmacist called him up and inquired what he meant by this), Vaseline Oil, etc. Oils in combination on the market are: Rubrol (red color), Viridol (green color). Sprays: Sabolol spray, Pinoleum spray, etc.

The physician already informed of the latter oils prescribes them freely, even for internal use (such as aromatic albolene). Then, as is always the case, the physician experiments with combinations of various chemicals with the same oils even as far as adding alkaloidal salts, which of course adds danger to improperly dispensed prescriptions, if there be any difficulty in obtaining an equal distribution of the potent drug.

The convenience of emulsifying combinations containing oily ingredients with acacia has lessened the labors of the pharmacists, and when any difficulty was met with in obtaining a desirable mixture, an emulsion was the solution of the problem. This has not been the intention of the prescriber in most of the cases, as for instance, to use an emulsion of the hydrocarbon oils with acacia for atomizing purposes or for ear drops.

It is the duty of the pharmacist to produce an accurate and uniform finished product, and to manipulate the ingredients in such a way as to produce either a clear or a proper suspension to insure uniformity of the ingredients prescribed. The following are some examples:

R 1.	Camphorae	$\frac{1}{2}$ gr.
	Mentholis	$\frac{1}{2}$ gr.
	Glycerini	2 dr.
	Natrii bicarbon	3 gr.
	Liq. albolini, Ad.....	$\frac{1}{2}$ oz.
	M. Sig. Ear Drops.	

—Dr. B.

Dissolve the camphor and menthol in a small quantity of Albolene with application of heat. The bicarb. of soda in the 2 drams of glycerin in the same manner (in a separate receptacle). In order to combine these to make a staple and uniform mixture add a little lanolin (anhydrous) and mix all well together.

The resulting mixture makes a uniform suspension and there will be no separation on standing.

- R 2. Resorcini 0.5
- Albolini 50.0
- M. Sig. Drop into ear as directed.

—Dr. F.

As the resorcini is not soluble in albolene, or by heat, we dissolve it in a very small amount of alcohol, rubbing slowly in a mortar and then add the required amount of the albolene and a clear mixture is the result.

- R 3. Resorcini 0.3
- Mentholis 0.2
- Albolini 30.0
- M. Sig. Ear Drops.

—Dr. Davidson.

In this case dissolve the menthol in the albolene by slow heating. Dissolve the resorcini as in the previous prescription and then mix together and a clear solution results.

- R 4. Cocaini hydrochloridi 0.2
- Sol. adrenalini hydroch 6.0
- Mentholis 0.1
- Liq. petrolat. q. s. ad..... 30.0

The adrenalin is not miscible with mineral oils, therefore use the adrenalin inhalant, which is an oily solution of some strength and dissolves easily in the oil. Instead of the salt of cocaine use the pure alkaloid which is soluble in liquid petrolatum by heat. Put the menthol into the bottle while the liquid petrolatum is still warm; it will therefore dissolve and the entire mixture is clear.

- R 5. Mercury salicylatis in albolini..... 20%
- Sig. To be used for injection.

Mercury salicylate we all know is not soluble in albolene nor does it remain in stable suspension for any length of time. The precipitate is thick, heavy, and very difficult to agitate, and as this is one of the most important mixtures with a very strong and powerful drug and used for deep injections, a uniform and easily subdivided solution must be made. In order to produce this effect emulsify the salicylate of mercury with the albolene by the addition of one-half percent of lanolin anhydrous.

- R 6. Tr. benzoini co. 1 dr.
- Eucalyptolis 10 M.
- Benzoinolis liq. q. s..... 1 oz.
- Spray throat.

If this prescription is compounded as written the benzoinol separates from the entire mixture. Rub the tr. benzoin compound with a little lanolin and one-half the quantity of Benzoinol. Apply a little heat to dissolve, add the eucalyptol and the balance of the benzoinol and the result is perfect. The doctor is under the impression that because benzoinol is a benzoin preparation the compound tr. benzoin should dissolve with it, but we know that it does not.

- R 7. Mentholated oil 10%
- Sablolol oil q. s..... 30.0

In this prescription I simply mention this to indicate the intent of the pre-

scriber. The mentholated oil 10% means menthol dissolved in albolene or any other mineral oil in the percentage of ten, and salolol oil is salolol spray, a proprietary article, in its original state.

R 8. Quinine and urea hydrochl.	0.6
Mercury salicylate	3.0
Adeps lanal. (anhydrous)	1.0
Ol. olivarium	30.0

The proper way to dispense this prescription is to dissolve the quinine and urea hydrochl. in a few drops of water, emulsifying with the lanolin, then adding the mercury salicylate. Then rub up well with the ol. olivarium. Care must be taken that this preparation should be thoroughly sterilized.

R 9. Euresolis (Knoll)	3.0
Calamini praep.	6.0
Zinci oxidi	9.0
Amyli	12.0
Ol. olivar.	15.0
Magnesiae lactis (Phillips).	

This prescription was sent to me by Mr. H. A. Voght, a pharmacist, who found some difficulty. I tried it according to his description of the method he used in dispensing it and found it satisfactory. The following is the method:

Saponify olive oil and euresol with the milk of magnesia. Rub up with starch, zinc oxide and calamini, then q. s. rose water.

R 10. Camphorae	0.2
Mentholis	3.0
Ol. pini pumilionis.	2.0
Milk magnesia q. s. Ad.	60.0

Rub up the camphor in a glass mortar with the menthol and ol. pini pumilionis, then saponify with the milk of magnesia, and it will form a nice uniform mixture, and the camphor as well as the menthol will be in suspension. No acacia is necessary in this case, in spite of the fact that I have known it to be used.

R 11. Ext. aloes	1½ gr.
Podophyllini	¼ gr.
Cascarini	¼ gr.
Ol. carui	1 M.
D. t. D. Pill No. 24.	

In this prescription you will notice that one M. of the ol. carui is prescribed per dose. Some pharmacists use extract of licorice as an excipient, but it is far better to emulsify the oil with a little acacia and then add the other ingredients, when it will form a nice mass from which the oil will not be separated.

R 12. Nitroglycerini	1 100 gr.
Extr. nuc. vom.	1 8 gr.
Ext. digitalis fl.	1 M.
Zinci valerianici	3 gr.
Ol. mentha. pip.	3 gr.
M. f. D. t. D. Capsules No. 30.	

This prescription was dispensed in several stores and different methods were used. Some of them, from the appearance of the capsules, formed a dry mixture of all the ingredients and dropped the oil of peppermint in afterwards. The finished products were not of elegant appearance.

My method was to emulsify the oil of peppermint with a little acacia and then add all other ingredients, using also extract glycyrrhiza, which formed a nice mass.

R 13. Methylene blue	0.2
Phenyl. salicylatis	0.3
Ol. santali	0.4
M. f. D. t. D. Capsules No. 30.	

Dissolve the phenyl salicylate in the santal oil by application of heat, then rub up the methylene blue with a little sugar of milk and divide in thirty capsules, then with a dropper put in each capsule 0.4 santal oil. Seal and put into a larger capsule.

A different method was used by another pharmacist. He mixed the phenyl salicylate with the methylene blue and then rubbed same together with santal oil and then divided into capsules. This was not the proper method because there was not an equal division of doses.

R 14. Ol. gaultheriae	2 dr.
Ol. terebinth	2 oz.
Alcohol q. s.	+ oz.

In compounding this prescription in the order written it will turn out a cloudy mixture, but by mixing the oil of wintergreen with the alcohol and adding the latter to the ol. terebinth little by little it will form a nice, clear mixture.

All of the prescriptions which I demonstrated to you were presented in our store for dispensing and written by various medical men, with the exception of the one by Mr. Voght mentioned heretofore.

It is true that some of these difficulties might be easily overcome by any experienced pharmacist, or even by a student of a college of pharmacy, yet we must consider the fact all are not experts, and that when we strike a snag it is our duty to experiment, with the prescription at hand. I have shown to you that with a little care and more perseverance we may obtain brilliant results. There should be nothing to discourage repeated experimenting in our profession. We owe that to ourselves, to the prescriber, and to the patient. The everyday pharmacist in the rush of his work, is not expected to be an expert, yet I am positive that he is willing to learn from the experiences of his colleagues, and therefore the frequent publications in the pharmaceutical press of just such material as I have offered you should be more and more practiced and encouraged. All our ideas do not originate within ourselves; we must learn by absorption and very many of my successful experiments have been the result of reading and listening to the effort of other colleagues.

Any junior clerk, without experience or pharmaceutical education, can mix five or six or more ingredients, if he knows how to measure and weigh, and then if the preparation does not mix or combine put on a shake label.

I once had a very capable assistant who dispensed a great many prescriptions per day in the store where he was formerly employed, but he acknowledged that it was done mechanically, and that he was never allowed to make the prescription over again if it did not look satisfactory, because time and material would have been wasted.

In conclusion, it should be the pride of every pharmacist to send out from

his prescription room preparations which he feels have been given the benefits of all pharmaceutical knowledge that is within him, and never to say to himself that is good enough, or that it will serve the purpose. He must consider that his duty is fully completed only when his conscience tells him that he did what was right and that he would not hesitate to apply the preparation to a member of his own family or even to himself.

THE COMMERCIAL ADVANTAGES OF PROPERLY APPLIED PROFESSIONAL PHARMACY.*

FRANKLIN M. APPLE, PH. G., PHAR. D.

When solicited by your learned Dean, Prof. Sturmer, to address you upon this topic I was prompted to reply in the negative to his request, but, upon second thought presuming that I may be able to present at least one thought that may prove helpful to uplift pharmacy—both professionally and commercially—I agreed to offer a brief discourse, for which I bespeak your charitable criticism.

Upon taking up this topic for discussion it is necessary to ascertain if it is possible to absolutely divorce commercial pharmacy from professional pharmacy. Can one view professional pharmacy in all its phases without taking into consideration the commercial aspects of the subject? I feel certain, in the light of our customs and the laws upon the subject, that it is impossible to ignore the question of reward for services rendered to society in any professional vocation, unless one is endowed with such an abundance of worldly goods that he can take up his professional work as an altruist; but there are very, very few of those of our calling who could afford, if they so desired, to join the ranks of those of our citizens who are so generously provided with riches that they can follow the lead of some others who endeavor to appease their troubled consciences by making donations to colleges, institutions, libraries and movements for the betterment of the society against which they have greatly sinned. Such being the facts we must be guided by the conditions that surround the great majority of those of our calling, and recognize the commercial side of professional pharmacy as a necessity.

At the outstart I do not wish you to confound commercial pharmacy as practiced today in many establishments with the commercial pharmacy of which I wish to speak, for they are absolutely incompatible. To some, yea, many minds commercial pharmacy means customs, practices and merchandising that are flagrant cases of misbranding when the name pharmacy is attached thereto, having about as much right to have that honored name appended to their trading as a clothes horse has to be recognized as a member of the equine family.

The topic under consideration would indicate that there exists such a calling or occupation as professional pharmacy. What constitutes such a vocation?

Professional pharmacy consists of the art and science of selecting, preserving,

* Read before the Senior Class of the Medico-Chi College of Pharmacy, February 28, 1913.

preparing and compounding drugs and medicines such as will serve as aids to the medical men in the cure, mitigation or prevention of disease.

Commercial pharmacy of the true type, consists of the proper methods of disposing of one's professional pharmacy efforts, in order to gain an honorable livelihood; and it stands to reason that the better the grade of professional pharmacy one has to offer to the medical men and to the public the greater will be the rewards received in a commercial way.

How is one to acquire the best quality of professional pharmacy?

In the light of experience of scores of years it has been proven that practical experience, coupled with a proper course of training in a first class college of pharmacy—in such as it is your good fortune to be enrolled—is the best manner in which to become proficient as a safe and skillful handler of drugs and medicines—one who can command the confidence and respect of the medical profession, and of the public; provided you conduct yourself and your establishment of business in a manner that will not offset and nullify your professional qualifications.

Now we have reached the point upon which I wish especially to direct your attention, and I will endeavor to point out the advantages, commercially considered, of the suggestions to be offered to you.

Quite recently I noticed in the daily papers an account of a reception tendered to Dr. Isaac Sharpless, President of the Haverford College, at which time and place he is reported to have given utterance to the following statement:

"The world today is becoming more and more professional and business is now regarded as one of the professions. Are we doing what we should for those who go into business? Business is a profession and there is an increased demand in that profession for college trained men, for it requires a highly developed intellect."

Certainly business cannot yet be placed upon the same plane as the three "learned professions"—Law, Theology and Medicine (of which last profession Pharmacy is a recognized special branch), but if it is to be classified as a profession, it most assuredly is incumbent upon the members of the learned professions to most carefully inspect their business customs and standards, as they certainly are expected to show due respect in their transactions with their fellowmen for the dignity of their calling. Unfortunately many of those of our calling have been careless and unmindful of these obligations, having followed the practices and customs of non-professional merchants, who have no respected standards to uphold and protect; but in many instances that I have observed in a quarter century's connection with this professional calling, such neglect has brought its own swift and sure results—dismal failure to the proprietors.

On the other hand I can bring to mind many instances of fellow pharmacists who have conducted their establishments in a dignified and confidence-producing manner, fortified by a thorough professional training in pharmacy, who have triumphed in close competition with merchandising establishments misbranded as drug stores, and have built up reputations that will be life-long assets.

How can we most properly apply our professional pharmacy?

We can do so by acts of omission and acts of commission, also by precau-

tionary measures, to avoid and combat if necessary, harmful influences. Thoughtlessness and unguarded cooperation in the plans and schemes of sordidly selfish manufacturers is one of the chief causes for failure upon the part of pharmacists to get the full measure of benefits from their professional qualifications, as is evidenced by the following examples:

a—Using in one's work cheap substitutes for standard remedies prescribed by the medical men, or using impure or valueless preparations purchased from unreliable resources of supply just because the element of cost absolutely ruled the transaction.

b—Permitting one's store room and show windows to be debased and defiled by displays of goods of questionable therapeutic value, also using advertising placards that are good samples of certificates of qualification for membership in the Ananias Club.

c—Feeling a false sense of pride in having one's name and address appended to the advertisements of many of the nostrums that flood our markets today. Ofttimes, if you knew the true composition of the products and their therapeutic value (?) you would want to sue the man responsible for associating your name with his goods.

d—Because the degree of Graduate of Pharmacy or Doctor of Pharmacy has been conferred upon you, do not allow yourself to be deluded into the belief that it is synonymous with Doctor of Medicine, with the rights that pertain thereto morally and legally. Each has its place and special work to do, which the other one cannot properly fill or perform.

e—Encouraging the public to continue self-medication by offering it a full line of preparations labelled with suggestive therapeutic titles. An old adage states that he who has himself as a client in a case of law is a fool and how very appropriately can this be made to apply to one who is ill, when he endeavors to supplant the regularly educated and licensed medical practitioner.

f—Claiming to conduct a first-class, safe, reliable pharmacy, when it may be a fact that the assistants employed therein are not of a responsible age, have had no good practical experience and have not a sufficient amount of good common sense and education. Remember that bluffing and misrepresentation will not go unrewarded very long in these days of enlightenment and higher education; also that you will not alone suffer the consequences of such unwise, foolhardy and unfair customs, but the entire profession must stand the knocks of our enemies, for we assuredly have an abundance of the latter to contend with these days of license—mistaken for liberty.

How can we properly apply our knowledge designated as professional pharmacy?

a—The first thought that must be borne in mind is the fact that you have been trained and educated as a member of one of the learned professions, which places upon you obligations as well as it confers upon you privileges and honors, and you cannot shirk these obligations so long as you number yourself amongst the members of the pharmaceutical profession. If you have not heard of them kindly remember henceforth that a code of ethics has been supplied for each

one of the learned professions and their associated branches, and we are no exception to the rule.

b—As we are recognized as a branch of the medical profession it is self-evident that we should become well and favorably known to the members of that calling, and invite them to inspect our places of business, our equipment, our drugs and preparations, the evidences of our respect for their rights to be noted therein, the character of men employed to compound their prescriptions and dispense the commodities ordered by them for their patients.

c—Displaying your diplomas in a prominent place in your place of business, thereby showing to the laity and to the medical men your credentials, for which you labored so very hard, and possibly suffered many privations in your quest of them.

d—Demonstrate your qualifications as a Pharmacist by manufacturing your preparations of the U. S. P. and N. F., except in such instances where you cannot conscientiously properly prepare them. It is no disgrace to concede that some preparations can be better prepared by those specially equipped to manufacture them, in fact the U. S. Government permits a few of our medical agents to be prepared only in especially licensed establishments. Never allow your pride to deter you from supplying the very best medicine that can be produced, from whatsoever source it may come, for the needs of the diseased patient are paramount to all other issues.

e—The proper preservation of drugs, chemicals and their preparations is recognized as being very essential to their activity being conserved, hence vigilance and intelligence are ever-more demanded of the dispenser.

f—Pricing of prescriptions is one of the most vital questions to be considered in the practical application of professional pharmacy, as it is the compensation we receive for materials supplied and for services rendered. A universal code of marking prescriptions has been prepared by one of our national associations, which is a very fine system to be guided by, provided an intelligent and well-posted party estimates the charges to be made. Ofttimes I have observed a total absence of these qualifications, judging from the figures marked upon the copy of the prescription. Do not make it a custom to gratuitously give the patient your services, making a charge only for materials used at a fair profit. If you employ a first-class prescriptionist you must (or should) pay him a goodly salary and you are certainly entitled to receive the cost of his services to you plus a reasonable profit together with the legitimate charges for the materials used.

g—I have touched upon the question of the clerk in the above paragraph but I wish now to elaborate somewhat upon this subject as it is a very vital one in the proper application of your professional pharmacy—as you will soon agree with me I feel certain. To each of you embryo pharmacists the question will soon arise: shall I become a proprietor or shall I seek employment in the store of some other pharmacist? Before hastily coming to a conclusion in this matter, I would advise that you carefully investigate the commercial conditions that exist today, the percentage of failures that are recorded in the life-time of the average business man, the tendencies of the members of the medical profession in the treatment of disease and the new force that must be contended with in the form

of the Parcel Post, which certainly works to the advantage of the established, large corporations and firms at the expense of the smaller dealers. I ask you to seriously consider these factors because they all have their influence upon the standards of our professional calling, for it is a well known fact that a superabundance of any sort of laborers or professional men leads to practices that are not conducive to good business ethics or legal practices. Evidence of the verity of this can readily be found in recent newspaper accounts of cases appearing in our federal courts.

h—I cannot conclude these words of suggestion and advice without reminding you of the fact that we are living when everywhere is to be seen progression in all lines of activity; hence when you have received your degree from your Alma Mater, which indicates that you have completed a designated course of study, do not deceive yourself by thinking that your course of study has been completed for your life-time, for, if when you graduate you should know all that has been stored up by generations past for your benefit (which fact I doubt very much), you will soon become a back number, qualified to be included amongst "the old fossils," unless you continue your studies by a system of home studies, from the pens of the best workers in pharmacy circles—professional and commercial.

Where and how shall you economically, conveniently and advantageously find this course? The course has been provided for the past half century by an association of pharmacists, which has ever been active in the best interests of an honorable, dignified and enduring profession of pharmacy, a member of which every respectable votary of pharmacy should become without delay. I refer to the grand, old American Pharmaceutical Association, of which association the majority of your faculty are active members. With the advent of the Journal of the association a most convenient form of sending you the course for home study has been provided, and you will find it over-running with golden nuggets of knowledge of practical value to every one of you.

Membership in this association is a most valuable asset if one does not abuse it, does not become a passive member only and if he directs the attention of the medical profession to his membership therein, as it maintains most cordial relationship with its sister association, the powerful and useful American Medical Association.

Do not forget that the cooperation of the medical men is a very, very valuable aid to one's success in this calling. It can be acquired and retained by merit and straightforward dealings one with the other, as an honest man to an honest man, and you know that an honest man has been said to be "the noblest work of God."

You may deem these statements overdrawn, or only the theoretical deductions of an imaginative mind, but I can assure you that I know them to be undeniable facts based upon an experience of somewhat over a quarter century's time, and this verity is demonstrated more clearly every year to one who observes the rewards of society for services rendered by its servants—whether it be good or whether it be otherwise.

THE DOCTOR, THE DRUGGIST AND THE PATENT MEDICINE
FROM THE PROPRIETARY STANDPOINT.*

FRANK J. CHENEY, PRESIDENT OF THE PROPRIETARY ASSOCIATION OF AMERICA.

The drug trade, like all Gaul of old, is divided into three parts. But it is in theory only that these parts are separated. In practice, they are so coordinated that it is often hard to say where the interests of any one of them begins or leaves off. While the trade is divided into retailers, wholesalers and manufacturers this division is, really, more a matter of theory than of fact.

The man who is classed as a "retailer" is, in almost every instance, also a manufacturer and sometimes a jobber. The man who is classed as a "jobber" is frequently a manufacturer and sometimes a retailer, and the one classed as a "manufacturer" is frequently a jobber, inasmuch as he often sells direct to the retailer.

The point I am trying to make is that the three theoretically separate branches have interests so closely interwoven that it is difficult to separate them, and classify them. Destroy any one branch and the others would have to undergo a complete reorganization, or be destroyed.

Eliminate the retailer, and where would the jobber be left. The manufacturer might go direct to the consumer, as some manufacturers are going. Eliminate the jobber, and the retailer would have to buy direct from the manufacturer, and he would find it hard, if not impossible, to secure many of the accommodations that he now enjoys from the jobber. Eliminate the proprietary manufacturer, and the jobber would immediately find more than 50 percent of his business gone by the board, and the retailer would in many cases have to go out of business, as not only would the proprietary manufacturer be eliminated but the retailer would be prevented from being a manufacturer, for there is no law that can say that Frank J. Cheney can't make medicine and that Azor Thurston can.

The organization of the drug trade may not be scientific. There may be duplications of efforts which, in theory, might be eliminated, but which in practice can not be. All three of the coordinated branches must exist; and for any of them to enjoy prosperity, all must be prosperous.

The sooner all branches of the trade realize this dependence and pull together, the better it will be. There are and always will be, matters of difference which will have to be discussed, and, in some instances, fought out, but the sooner we realize that the things which unite us are of vastly more importance than the things which separate us, the better off we will be.

We could well take a leaf from the doctor's book in this particular. The doctors have the closest organization for mutual aid and benefit of any class of people in America. They have the best organized labor union in the country. They have their fights, their differences and their troubles, but when there is a common enemy in sight they present a solid front that is amazing, and which, from the standpoint of organization methods, is a marvel.

*From the Report of the Committee on Trade Interests, presented to the O. S. P. A. annual meeting of 1912.

We may say to ourselves that this doctors' organization is the friend of one branch of the drug trade, but it isn't. It isn't the friend of any branch of the drug trade; it never was, and it never will be. Its whole tendency is to eliminate the entire drug trade, which it recognizes as a competitor, and the elimination of which it would regard as a blessing.

You retail druggists know better than I can tell you how many doctors are dispensing their own medicines, and how that number is growing every year. We see vast industries built up which cater to the doctor, by providing him with drugs for his dispensing, and you know that this dispensing, aside from its commercial aspect, is wrong in principle, and wrong in practice.

When a doctors' organization—be it local, state or national—tries to tell you how to conduct your business, you can depend upon it that its evidence is bad from your standpoint, no matter how good it may be from the standpoint of the advisor. It is the advice of a competitor, not a friend—a competitor who would like to see you reduced to the position of a dispenser of soda water, a purveyor of cigars and candies, and who is constantly forcing you into new lines of merchandising. You handle paints, which the hardware man formerly handled. You handle candies, which the candy man handled; you handle cigars, which the cigar man handled; you handle a hundred different articles which no other merchants have handled, and you have been forced to do it very largely by the doctor. You are obliged to handle merchandise, to become merchants, and every year you are becoming more of a merchant and less of a professional man.

This may not be pleasant, but it is true.

Do you think that, if you should drop all your side lines, your non-professional lines, so to speak, that your drug business would increase? Would the doctors stop dispensing? If you think so, try it. A strictly prescription drug store could not exist outside of the very large cities in this state.

While I am talking of competition, I want to go a little farther. From the standpoint of the manufacturer I know, and every manufacturer knows, that the retailer is, and must be, a competitor of the manufacturer. Every specialty you make and sell, every one of your preparations which you make or have made for yourself, is a competitive preparation. It is sold where some other preparation would have sold were it not for yours, and that makes it competitive.

I have no fault to find with competition, for I believe that competition is, in some respects, the life of trade; but I want to say that this competition from the retailer makes it very expensive for a proprietary medicine manufacturer to do business, much more expensive, than it is for a proprietary food manufacturer to do the same volume of business.

The reason for this is perfectly clear. The food manufacturer has a product which is distributed through the retail grocery stores and the retail grocer is a distributor and not a competitor. He does not make a food product, and there are few houses in the food business which put up competitive lines under the merchant's own name. However, these houses are increasing, and the food manufacturers will soon be up against the same proposition the drug manufacturer faces. This feature of the proprietary business has grown until we have reached the point where the manufacturer's advertising does not bring

him the returns it formerly did, and where, in order to maintain the same volume of business, he is obliged to spend more money.

He cannot rely as he did in former years upon the support of his distributor, for this distributor is now an active competitor, and has been educated by his organization, state and national, to be a competitor first, and a distributor afterward. In other words, to sell the advertised article only as a last resort. I do not say that all of you are doing this, but some of you are. I might not be bold enough to say it to you thus directly were it not for the fact that I have been a member of this Association for thirty years and feel that I have a fraternal interest in it.

What I have tried to do is to show you where the proprietary medicine manufacturer differs from the food manufacturer, and why his cost of doing business is so much higher. I can say to you very frankly that this increase, and steadily increasing cost of doing business, has driven some manufacturers to sell their goods largely through the general storekeeper, and has made many other manufacturers seriously consider this method of securing an output. The retail merchant is not a competitor, but a distributor.

Through the very laws of competition which enter into our business YOU become a manufacturer, while I cannot become a retailer and there you have the best of me in a way. But you cannot enjoy any of the benefits, or the privileges of being a manufacturer, without having some of the responsibilities, or without standing some of the chances that a manufacturer must stand.

We hear a great deal from time to time about "patent" medicines, and the alleged pernicious effects of them. These attacks are just as much against any remedy *you* may prepare yourself, or have prepared for you, as they are against any remedy that is prepared elsewhere, advertised nationally and distributed universally.

Just the minute you prepare any medicinal preparation in any greater quantity than you might prepare for a prescription, or sell that preparation without a prescription for it, you become a manufacturer, subject to every law, statutory or moral, which governs the largest manufacturer in the business. Not a law was ever enacted or proposed in Ohio to regulate the "patent" medicine business which didn't affect you just as much as it did me in the conduct of my business in this state. The fact that I have a larger business in my specialty than you have in any one of your preparations does not make me any more amenable to these attacks than it does you, if you make and sell a dozen bottles of cough remedy in a year.

Where there are any state laws regulating the manufacture and sale of proprietary medicines, you have to comply with these laws just the same as I do. Any law that would put me out of business, would put you out of business so far as your own preparations are concerned, and would also prevent your handling any preparation, and would leave you nothing more than a soda water and cigar store. Your drugs would rot before they were used; your prescription case would decay and your scales rust apart. You might sell a lot of candy, and cigars, and soda water, stationery, wall paper and paint, and penny post cards, stamps, soap, and an assortment of shelf groceries, but your drug store

would be a misnomer, and instead of being a professional man, you would be a merchant.

If you think I am wrong, when you go home, figure over your business. Estimate what portion of it consists of the sale of prescriptions, advertised proprietaries and your own preparations. Then figure on the elimination of the proprietaries and your own preparations, and see where you would land. Cut them out and where would your business be? Can you live on the prescriptions you fill? Can you live on your preparations plus your non-medical merchandise, or do you, to show a profit, have to sell proprietaries of your own or some one else's make. If you can, why have you not become a merchant and a manufacturer? You can't live on your prescription business, and it isn't right that anyone on earth should try to make you think you can.

The manufacturer has shouldered a tremendous burden. He has stepped into the front rank of the fight for your rights. He defends your business when he defends his own. When he opposes legislation conceived for the purpose of putting him out of business and for no other purpose at all, he also defends your right to do business as a manufacturer. Were it not for the activities of the manufacturer, I dare say the druggists of Ohio would have been out of business years ago.

The manufacturer does not profess to be unselfish in his endeavor. I don't profess to say that he would work for you were not your interests, his interests. But your interests and his are identical. In working for himself, he has to work for you, and in working for both he seldom asks you to bear any part of the burden. However, if an adverse law should be passed—in Ohio for instance—while you would be put out of business, the manufacturer, doing business in every state, would not be.

Sooner or later the pendulum would swing back, the people would demand the right to buy domestic remedies, and the laws would be repealed or amended. Then the manufacturer could do business in the state again, and even during the temporary suspension that would follow the enactment of restrictive legislation, he could continue to do business in the state if he wanted to, by advertising his product direct to the consumer, and mailing it to him from some other state, or by sending it to the consumer by express.

Now I want to repeat this point: We are all in business together, and what helps one helps the other; what hurts one, hurts both. We are interdependent and we can't get as far by pulling apart as we can by pulling together.

I am going to be frank and say to you that many manufacturers don't like to depend for their distribution on their competitors. That is why some manufacturers prefer to sell direct to the country merchant, and that is why the great wagon business has been built up. The case of the wagon houses is an example of a manufacturer being also a retailer, for that is really what he is, and these manufacturing retailers are doing more business today than you may think. I believe that one of the wagon concerns now in the field, which has been built up from nothing, in the last two decades, is doing more business, selling more medicines, than were ever sold by any one concern in the history of the business. And there are others almost as large. I dare say that half a dozen of the wagon

concerns are larger, and sell more goods, than any half dozen advertising proprietors you can name.

And this leads me to something else. We hear some talk that the proprietary medicine business is falling off, but it isn't. The people are taking more proprietary medicine today than they ever have. The sales are constantly increasing in spite of all the knocking that has been going on; public confidence in them, as efficacious remedies, must be increasing, in spite of all that has been done to destroy that confidence.

The United States Census Report for 1910 showed a wonderful gain in the proprietary medicine output in the period between 1904 and 1909. This is the period in which the clique of political doctors, backed by powerful magazines, strained every point to put you, and me, out of business. Yet in that period, production of proprietary medicines increased 21 percent, reaching the total of \$141,942,000 in 1909. During the same period, the amount of capital invested was increased 32 percent. These figures, especially the former, do not look as if the interests that have been trying to put us out of business have made much headway.

The same period—from 1904 to 1909—was marked by the passage of the National Pure Food & Drugs Act. This law, very frankly, was designed to drive patent medicines out of the market, and I can imagine the keen disappointment of these medico-politicians when it failed to do so.

* * * * *

The manufacturer who advertises his products nationally, or at least widely, has borne the brunt of the battle that has been waged against domestic remedies, or any medicines which did not pay tribute to the doctors. In doing this he has been fighting his own battles and the battles of those other manufacturers who have wide or national wide distribution, but who have been content to let some of the rest of us carry the heavy burden. We have also been carrying your load as manufacturers, protecting your interest as well as our own, and making it possible by our efforts during the last decade for you to continue as manufacturers. In many instances you retailer-manufacturers have loyally helped us—many of you have come to our aid whenever you have been asked to do so. A few have not, but most of you have recognized that your interests are identical with ours and have been alive to the situation.

Many of you retailer-manufacturers may imagine that you are immune from punishment under the Federal Food and Drugs Act because the articles you manufacture do not enter generally into interstate commerce.

Down in New Jersey there was a retail druggist who believed the same thing. He manufactured a preparation which he sold over the counter and which had no sale except over the counter. His article was in absolute compliance with the laws of his state, but the law of his state was not uniform with the law of the federal government, so that while he was conducting a perfectly legal business in his state, the business became illegal the moment he sent a package of his preparation to another state.

One day he received an order for a dozen of his preparation from a jobbing

house. It was the first order he had ever received from any person outside of the state and it is the only such order he ever received. Very shortly after this shipment was made he was served with notice that his goods were mis-branded and that he was liable to fine and imprisonment for violation of the Food and Drugs Act; and inasmuch as the label on his goods was not in compliance with the requirements of the National Law, he pleaded guilty and paid his fine.

Neither you nor I suppose that this one order was anything more than a trap set for him. And such a trap might be set for any retailer, at any time, if the goods he manufacturers are not packed in compliance with the National Law, though they might comply absolutely with the state law.

This one case, which is well authenticated, is an extreme one and is the only one of its kind that I now recall, but it shows the power of the government in case it wants to exercise that power unfairly, as I believe it did in this particular case, to secure conviction or pleas of guilty or "nolo contendere" from many small manufacturers; and such convictions or pleas constitute the bulk of the record which the Agricultural Department proudly parades as evidence of its activity.

In this article I have tried to point out that the manufacturers who have national, or very large, distributions, have fought your battles for you, have taken your part and have protected your interests.

Trade interests demand cooperation between coordinated branches of the trade, and I have shown you how one branch has worked for the interest of another. In any competitive business there is and always must be points of difference, but there are points in which interests are absolutely in common and when it comes to a question of the right to do business, all branches of the drug trade are, and must be, united, and must stand shoulder to shoulder in any fight waged against that right. We may differ on many propositions, but we cannot differ on this one—that we have a moral right to do business, that our business is necessary and essential to the happiness and well-being of the people, and that on this proposition "United we stand, divided we fall."

We may fight out our differences if we have to, but unless we—both retailer and manufacturer—stand united on the great principles of our right to do business as manufacturers of proprietary articles, and deny the right of any man or set of men to deprive us of that right, we will find ourselves in a position, sooner or later, where the point of difference will have been submerged in the wreck of our business.

A DAILY NEWSPAPER'S VIEW OF ADVERTISED MEDICINES.*

For several years The North American has been between two fires on account of its policy on medical advertising. All those who make or market proprietary remedies have quite generally dissented from our position and those handling worthless or questionable preparations have been bitter in their attacks.

*"The Doctors and Advertised Medicines." Reprinted from *Philadelphia North American*.

On the other hand, the physicians habitually express more resentment and discontent with the policy of *The North American* in this matter than with that of any other newspaper—this despite the fact that we are more than half in accord with the medical men in their professional antagonism to preparations advertised in newspapers.

The attitude of the physicians seems the more strange, since every one of them knows that no other newspaper has a policy so strict and a standard so high. That paper singled out for criticism is the one whose position approaches most nearly to that of the physicians themselves.

Our policy of excluding certain medical advertising began a dozen years ago. At first it demanded only the barring of what may be called obscene announcements. Next it put the ban upon matter palpably fraudulent. Then we excluded children's remedies containing large quantities of opiates. Next to go, naturally, were preparations for adult use which contained drugs or alcohol in habit-forming quantities. Further consideration dictated the exclusion of all medical advertising from the "classified" columns.

Most recent of advance steps was the decision to decline advertisements of remedies—including those we regard as having merit—wherein positive statements of "cure" were made. This restriction having proved ineffective against the ingenuity of the advertising phrase-makers, we finally excluded the word "cure" in any sense whatsoever.

Our position was persistently attacked by the patent medicine men. They said it was not only unique, but impossible. They challenged it first, upon the ground that we had no right to exclude their business, save upon the one ground of bad credit. A newspaper, they contended, was in advertising a "common carrier," with no authority over the statements of those who bought its space. They cited the principle "caveat emptor"—let the buyer protect himself. But with the new standards of business ethics and public service then gaining their first impetus, it was not very difficult for us to enforce our position against theirs.

They fell back then on the argument that we had no right to act as censors, to put a cloud upon their business, and to that extent damage their property rights.

This failing, they pleaded that all other newspapers accepted the business without question, and pointed to journals boasting high standards of editorial and news ethics which did not assume the attitude taken by *The North American*.

Finally, they insisted upon the efficacy of their preparations. Our answer was that no matter how meritorious a remedy might be, if it contained habit-forming quantities of drugs or alcohol, we would exclude it. So the controversy has continued. But it has resulted, as we have explained, in a steady raising of our standards. Nor are these standards yet fixed. Certainly our rules never will relax; any change must be toward making them more drastic.

The stand we have taken has not been dictated by "business reasons," for it has cost us not less than \$250,000 in advertising revenue. It was made necessary as a matter of logic and of honor. We could not maintain an editorial policy which demanded opposition to frauds in politics and Wall street and elsewhere, while cheats were promoted in our advertising columns. It is five

years since a line of liquor advertising appeared in *The North American*, and, of course, remedies with alcohol had to go also.

Pressure from these interests in behalf of their products has been no more persistent than that from the medical profession for the excluding of all proprietary remedies. The doctors, who take this position seem sincerely to believe that because *The North American* has a higher standard than any other paper, its advertising does the greater harm by giving character to the preparations it accepts.

Nevertheless, we believe their contention that all these remedies are without merit is untrue. And in evidence we offer the fact that these same physicians have indorsed many of these same remedies and prescribed them for their own patients before the preparations appeared in newspaper advertising. Their attitude would indicate that the test of a preparation's efficacy lies in the ethics of its presentation rather than in its chemical formula. Later we shall cite some convincing examples.

Another form of the charge is that advertised remedies—even those which pass *The North American's* restrictions—are nostrums, and inventions of quacks. Yet our investigations show that a large majority of them are prescriptions by doctors in good standing. Many of them have been the discoveries originally of physicians of the highest class, and have been commercialized solely because their undoubted value has been recognized.

We shall remark right here that we believe that any remedy which stands the test of years must have merit. Doctors who explain the apparent efficacy of these preparations by citing the fact—which we quote from Dr. Woods Hutchinson—that four-fifths of the ailing persons would recover without treatment, should be wary lest the public apply the same test to the medical profession. They might quietly look over their office records and see if the proportion holds good among their own patients.

There is a third objection offered against proprietary remedies—that they tend to make confirmed medicine takers. In this argument we find a good deal of truth—as regards doctors as well as the advertised products. Every physician knows that some members of the profession prescribe in a manner to produce the same deleterious result.

Our own belief is that far too much medicine is taken, both from the patent medicine bottle and the Latin prescription; that it would be better for the race if the amount could be reduced to one-half or one-fourth. And whenever the profession is ready to cooperate we shall start a campaign against the taking of medicine, reserving, however, the right to use a prescription or a patent preparation when we are ill ourselves.

As to the charge of excessive prices—that a bottle selling for a dollar costs only a few cents to prepare—we think that on this ground the proprietary remedy can take care of itself, by comparing its price with a doctor's fee and the bill for a prescription of like cost in manufacture.

It is said, also, that the advertising of a remedy which has trifling medicinal value, or none at all, is a deception upon the sufferer. We have no desire to enter

a controversy here, but we know, and doctors are perfectly aware, that they all use on occasion the deliberate subterfuge of prescribing "blank" powders, "dough" pills and tinted water with an innocent medicinal flavor. Every physician knows the value of suggestion in treating ills due largely to imagination and nervous fear; and even a patented remedy which has the soothing effect of the doctor's kindly deception has an equal merit.

But it is argued, further, that the hit-or-miss taking of remedies, without a medical examination, is palpably wrong and may be dangerous. We do not quarrel with the warning, and we would almost invariably take the precaution of consulting a physician ourselves. But let it be remembered that medicine is by no means an exact science, either in theory or in practice.

The various schools differ radically in their views. One excludes substances which another uses persistently. So that the treatment gets back to the individual judgment of members of the same school; and, back of that, to the strength and purity of the drugs dispensed. As to the latter point, every one knows that, in small towns especially, doctors keep their own stock of medicines and will buy job lots of pills of different kinds, in which both strength and purity vary from twenty-five to fifty percent.

It would seem that experience and the making of large quantities would operate to make the proprietary products more accurate as to proportions than many of the preparations dispensed in the manner we have indicated.

So much for our defense to the charges of medical critics that our policy is inconsistent. Now, if consistency is to be measured, we would like to put a question to the doctors themselves.

Why is it that a remedy or preparation which the most ethical and conservative of them prescribe, so long as it is advertised only in medical journals, is immediately scouted and condemned by them when it appears among newspaper advertisements?

If we were discussing remedies containing dangerous drugs, the answer would be obvious. But we refer to simple, well-known combinations in which there is no possibility of harm.

We mean, for instance, an ointment now widely known and used with beneficial effects by tens of thousands of persons. A few years ago it was dispensed in prescriptions by thousands of physicians. But since it has been advertised in newspapers they have discovered that it is a useless sham.

Take another widely used preparation for poulticing. Doctors prescribed it for years; the medical journals applauded its healing properties. At last the makers sought to extend its use by newspaper advertising—and at once it was put under the ban of the profession.

Take a proprietary article which is recognized as the highest-grade preparation made for antiseptic and disinfectant purposes. Once prescribed freely by physicians, it is now condemned by them as being very nearly worthless.

There is a tonic and nerve food whose name is becoming a house-hold word through advertising. It seems but yesterday that it was recommended by specialists and indorsed by the professional journals. But now that it is urged direct

upon the public through magazines and newspapers, the doctors tell us that it is only a form of "cottage cheese," utterly without merit.

An example of another class of remedies we shall use the name of one Isterine, named for the father of modern antiseptic surgery. This useful preparation is still ethically correct, according to the standards of the profession, for it is advertised only in medical journals. But even this does not save it. For it has become so widely known that people go to drug stores and buy it freely; and now we are told that it has no efficacy. Perhaps it has not; but, in that case, we have paid for a lot of bad medical advice in past years.

The Philadelphia Medical Journal, a publication whose views and whose editor we know to be progressive, has said that The North American's stand on medical advertising is the one feature of it which is not progressive.

Our policy in this regard rests upon a sound economic basis, which is the foundation of all progressivism. The highest function which a newspaper can perform through its advertising is to place within the easiest and cheapest reach of the consumer the product which he needs or desires.

A consumer who wants a cathartic, a poultice, a lotion or a disinfectant receives the best service from a newspaper which tells him where and how a sound preparation of the kind needed can be obtained. To make our meaning clearer we shall illustrate from a personal experience.

Having consulted our physician for a slight stomach disorder, we received a prescription and had it filled at a cost of fifty cents. The prescription, as it happened, was returned with the bottle of liquid. During a discussion the paper was shown to an interne in a Philadelphia hospital. He said the formula was very well known; was used by physicians everywhere. And the same thing, he added, was on the market in convenient tablet form, sold under a registered name.

We bought a package, at a cost of five cents. The same remedy, from a prescription, with the physician's fee, cost \$2.50.

This, of course, is an extreme case, and we freely admit that in case the disorder returned we should be likely to seek a medical examination. But there are hundreds of thousands of persons who cannot afford the money or time needed to consult a doctor for trifling ills. A dose of good old Epsom salts will do no one harm; and one-fifth of 5 cents worth will do as much good as \$2.50 worth of "magnesium sulphate."

As to the danger of indiscriminate medicine taking, let us remark that within forty-eight hours we have found that a popular practitioner in Philadelphia is prescribing for babies a preparation containing such a proportion of morphine as has been for years excluded from The North American's columns. Furthermore, this is a highly "ethical" remedy, for it is advertised nowhere save in the best medical journals.

We are quite sure that in the last analysis economics will govern the distribution of medical preparations, as regards those which have become standardized, and we believe that nothing the doctors may devise will prevent the operation of the law.

Both the patent medicine interests and the medical profession, by the way, are agitated over the proposal to establish a national department of health. We

favor the project, if the department be founded and conducted upon lines approximating to our advertising policy.

Proprietary remedy manufacturers are generally against the plan, and physicians generally are for it. Among its opponents are many who fear that it would drive their fraudulent and harmful preparations from the market. On the other hand, it is advocated by many physicians who would suppress every remedy publicly advertised, no matter how meritorious it may be.

Our hope and our belief are that when the department is established, it will destroy the worthless and harmful preparations, and protect those which are useful and honest.

The economic arguments for the ready distribution of such package goods through the medium of drug stores are so strong, that in this enlightened era congress would not dare to pass a law that would strike down a system so sound and so beneficial to the people at large.

"THE DOCTORS AND ADVERTISED MEDICINES."*

An interesting and instructive discussion of the "patent medicine" business recently appeared in the editorial pages of the *Philadelphia North American* under the above quoted title. The editorial well described the difficulties which have beset that paper because of its advertising policy. It says that argument and pressure alike have been brought to bear by the "patent medicine" men because it refuses certain kinds of medical advertising, and it explains on what grounds the rejection or acceptance of "patent medicine" advertising is based. On the other hand, the *North American* says that it has received almost as much criticism from the medical profession because it has not excluded all proprietary remedies. But, says the paper, "we believe their (the physicians') contention that all these remedies are without merit is untrue." Then it propounds this question to the medical profession:

Why is it that a remedy or preparation which the most ethical and conservative of them prescribe, so long as it is advertised only in medical journals, is immediately scouted and condemned by them when it appears among newspaper advertisements?

The answer to this question is that the physician does not condemn a non-habit-forming and non-toxic preparation that is first introduced only to the medical profession via medical journals but later is advertised direct to the public in newspapers, if—and this is a big "if"—the preparation is advertised with the same degree of truthfulness in the daily press as it was advertised in medical journals. To particularize, the *North American* refers to an ointment that a few years ago was advertised only in medical journals but more recently has been widely advertised in the newspapers. The paper says that since the preparation has gone direct to the public the doctors "have discovered that it is a useless sham." The ointment referred to, doubtless, is Resinol. Our answer to the *North American's* criticism is a simple one. The objections to Resinol are not that it is advertised in newspapers but that it is advertised fraudulently in newspapers. For instance,

* Journ. A. M. A., Vol. LX, p. 671.

when the Resinol advertising was confined to medical journals no such statements were made as: "Resinol heals the worst cases of eczema." Yet this is exactly what has been claimed for this preparation in the newspapers. The outrageous falsity of such claims can be fully appreciated only by physicians who recognize and admit that many cases of eczema baffle the skill of men who have devoted a lifetime to its study.

The *North American* refers also to "a tonic and nerve food whose name is becoming a household word through advertising." And it says further:

It seems but yesterday that it was recommended by specialists and endorsed by the professional journals. But now that it is urged direct on the public through magazines and newspapers, the doctors tell us that it is only a form of "cottage cheese" utterly without merit.

This statement contains both truth and error. It is true that Sanatogen the product referred to, of course—has been "recommended" by physicians and "endorsed by medical journals. And we would say that the same sort of physicians who endorsed it before it was advertised to the public are still endorsing it; and the same sort of medical journals which praised it before it went into lay publications are still praising it—because they are carrying the advertisements themselves. No doctor who had given the matter thought would say that Sanatogen is utterly worthless. In fact, it would be absurd to say that cottage cheese is worthless. What we have said, both at the time that it was advertised only in medical journals and today, is that Sanatogen is advertised under claims that mislead and thereby defraud the public.

The *North American* holds, and we believe rightly so, that simple home remedies, proprietary or otherwise, are legitimate articles of trade. To illustrate its point, however, the newspaper falls into an error that is not uncommon. This can best be explained by quoting:

Having consulted our physician for a slight stomach disorder, we received a prescription and had it filled at a cost of 50 cents. The prescription, as it happened, was returned with the bottle of liquid. During a discussion, the paper was shown to an interne in a Philadelphia hospital. He said the formula was very well known; was used by physicians everywhere. And the same thing, he added, was on the market in convenient tablet form, sold under a registered name. We bought a package at a cost of 5 cents. The same remedy from a prescription, with a physician's fee, cost \$2.50.

The fallacy of this argument is evident to every physician and to the average layman. The editor who consulted a doctor for a "slight stomach disorder" may have had merely a passing indigestion or he may have had incipient cancer of the stomach or other serious affection. That he had the former, he learned from the physician. It was for this information, primarily, that he paid his \$2, not for the prescription. Furthermore, even admitting that the prescription was, as the interne said, a well-known one, the interne did not know and could not know that "the same thing . . . was on the market in convenient tablet form, sold under a registered name." The only man who knows the composition of the "convenient tablet" is the manufacturer of the tablets. Evidently, then, the editorial writer could have had no means of knowing that he was getting "at a cost of five cents" the "same remedy" that was called for by the doctor's prescription. In other words, in the one case the editor obtained an expert opinion on the matter of vital interest to him—his physical condition

and he obtained for the treatment of his condition a preparation whose composition was known. For these, he paid \$2.50. In the other case, he would have obtained, for an unknown—to him—ailment, a box of tablets of unknown composition that might or might not have been of value. If the editor, in this instance, had had an incipient gastric cancer and decided to "treat it" in the cheapest way—by buying five cents worth of tablets—he would have saved \$2.45 and possibly lost—his life.

While, then, we cannot accept all of the arguments put forth by the *North American*, we believe that the editorial as a whole is an excellent one. It represents the attitude of the intelligent layman toward the "patent medicine" evil. That the medical profession is responsible for at least a part of the evil we must regretfully admit. The prescribing of unknown preparations has been a practice so common to the profession as to nullify to a large extent all efforts that are being made toward ridding the public of the nostrum evil. We cannot too often assert, however, that the medical profession does not believe that there is no place in commerce for simple home remedies. Neither can the medical profession object to any proprietary preparation solely on the ground that it is advertised in the lay press. What it does object to is the fraudulence that is apparently inseparable from the exploitation of such preparations when sold to the public.

NOTES ON CHEMICAL TESTS OF THE UNITED STATES PHARMACOPŒIA.

CARL E. SMITH, SAN FRANCISCO, CAL.

(Concluded from page 76.)

RESORCINOL.—The description of its appearance should be changed to read "colorless or not more than slightly pinkish," as this substance acquires a color very readily on keeping. The melting point is an important criterion of purity and therefore should be given in the form of a requirement; the boiling point, on the other hand, is unnecessary for establishing purity or identity and would be impracticable for that purpose, for several reasons; moreover, the boiling point given is not sufficiently elastic for medicinal products. A concentrated solution (1 in 2) is seldom entirely colorless, as now required, but a 5 percent solution should appear colorless in a stratum of 1 cm. and should not be more than faintly acid to litmus paper. In the examination for an odor of phenol, care is required that a "gentle heat," defined by the U. S. P. to be 32° to 38° C., is not exceeded, otherwise an odor of phenol may be developed through partial decomposition.

SACCHARUM.—The characterization of sugar as "white" and its saturated water-solution as "colorless," applies only to small bulks. Sugar of commerce, to which no blue coloring matter has been added, and its concentrated solutions appear distinctly yellowish when viewed in large bulk. While account is taken by the U. S. P. of the possible presence of ultramarine and Prussian blue, the use of which for "facing" sugar is obsolete, a test is lacking for water-soluble

aniline colors, which are now more commonly used. In this respect it would probably be sufficient to require that only a yellowish, but no greenish or bluish color should be visible, when a cold-saturated water-solution is examined in a stratum of not less than 10 cm., also that in a stratum of 2 cm. the solution should appear colorless. As a test for glucose and invert-sugar ammoniacal silver nitrate is not generally regarded with favor, because of the risk of misleading results; most foreign pharmacopeias direct alkaline copper solution for their detection, e. g., the Swiss Ph. requires that 10 cc. of syrup (2:1), 1 cc. of caustic soda solution (sp. gr. 1.33 at 15°), and 1 cc. of a 10 percent water-solution of crystallized copper sulphate, if mixed at ordinary temperatures, should show within five minutes at most a greenish turbidity, but no separation of red cuprous oxide; the German Ph. requires that a mixture of 6 cc. of a water-solution of sugar (1+19) with 5 cc. of Fehling's solution, if heated until it boils up once, should not show a yellow or reddish deposit at once. In addition to the present tests of the U. S. P., tests for heavy metals, chlorides, and sulphates should be required. A limit of non-combustible impurities, probably 0.05 percent, should also be set.

SACCHARUM LACTIS.—The official test for adulteration with sucrose was taken from the German Pharmacopœia, fourth ed., but the fact that "diluted alcohol" of that authority is much stronger than that of the U. S. P. was overlooked, hence the occasional reports that cane sugar has been found in milk sugar, because of greater solubility of the latter in the weaker alcohol. With the following changes the test gives reliable results: 2 gm. of milk sugar, in fine powder, are shaken frequently at 15° C., during half an hour, with 20 cc. of diluted alcohol (containing 69 to 70 per cent, by volume, of absolute alcohol) and 10 cc. of the filtered liquid are evaporated on a water-bath to dryness; the residue, when dried at 100°, should not exceed 0.03 gm. Other substances soluble in weak alcohol will, of course, also be shown by this test. H. Leffmann proposes a simpler test for sucrose, as follows: 0.5 gm. of milk sugar and 1 cc. each of oil of sesame and concentrated hydrochloric acid are shaken together; if sucrose be present, the characteristic crimson coloration will be formed within half an hour.

SALICINUM.—A melting range of 198° to 201° could be required as a test of purity, a test for heavy metals might be added, and a limit of 0.05 percent of ash allowed.

SANTONINUM.—The melting range of santonin of good quality is well within the limits of 170° and 172°, which should probably be made a requirement. The test for readily carbonizable impurities is best made with 0.1 gm. of santonin and 2 cc. of sulphuric acid. Ash should not exceed 0.05 percent.

SAPON.—As large quantities of soap are used in dried form for official preparations, it would seem that this should be considered in the establishment of a standard for soap, particularly, as no method of drying is specified in cases where dried soap is directed. Soap liniment, for example, is likely to vary considerably in soap content, unless the allowable limit of water in the granulated soap is specified; it should certainly not exceed 5 percent in either powdered or granular soap. According to published reports, olive oil soaps, especially in powdered form, have sometimes been rejected because of failure to stand the official test for "absence of animal fats" (more properly "soap made from animal fats"). This test is faulty in failing to take account of a variation in water content of

soaps and in failing to specify to what temperature the alcohol-solution should be cooled, both of these factors influencing the result seriously. Trials with several specimens of olive oil soap, moist and dried, show that the test should be modified somewhat as follows: A solution in 25 cc. of alcohol, U. S. P. strength, of a quantity of soap equivalent to 0.65 gm. of water-free soap should not gelatinize if cooled to 20° C. The limit of impurities insoluble in alcohol, but soluble in water, may be reduced to about 1 percent, and the limit of substances insoluble in both alcohol and water to 0.2 percent. The official test for "limit of alkalinity" is unsatisfactory and should be replaced with a more stringent test for sodium hydroxide, which is not found in soap of the better grade. Such a test is conveniently combined with the preceding one, by dissolving about 10 gm. of soap in 100 cc. of alcohol, washing insoluble matter with hot alcohol, etc.; the filtrate should not be reddened by phenolphthalein.

SAPON MOLLIS.—The official limit test for "free alkali" is inconclusive because it fails to distinguish between KOH and K_2CO_3 . The latter is comparatively unobjectionable in moderate quantity and is taken care of in the succeeding test for limits of alcohol-insoluble matter, but some uses of soft soap in dermatology apparently require presence of a slight amount of uncombined KOH, which should, however, be limited to about 0.25 percent. It is no great hardship to make a soap containing not less than 0.1 and not more than 0.25 percent of KOH, as determined by titration of a filtered alcohol-solution with N/10 acid, with phenolphthalein as indicator. Uniformity of composition could be further promoted by requiring either a minimum percentage of fat acids or by limiting the loss in weight as determined by the official method given under *Sapo*; the loss should not exceed 50 percent.

SODII ACETAS.—Doubtless because of an erroneous impression that solutions of the pure salt in water are not reddened by phenolphthalein, the requirement is made that a water-solution of the salt "should not affect phenolphthalein." The fact that chemically pure sodium acetate is alkaline to phenolphthalein in water-solution was pointed out by the writer to the revision committee before the eighth revision, but was either overlooked or disbelieved. Those who still doubt this can easily prove this for themselves by crystallizing the salt from a water-solution containing a slight excess of acetic acid and thoroughly washing the crystals with neutral distilled water. It will be found that this purified salt, when dissolved in water, will give a color with phenolphthalein. For comments on the assay see under *Potasii Acetas*.

SODII ARSENAS.—The most satisfactory method of assay is probably that of Williamson, as given in Sutton's *Volumetric Analysis*, 10th ed. (1911), consisting in the reaction of arsenic and hydriodic acids in a strongly acid mixture, resulting in the formation of arsenous acid and free iodine, the latter being titrated with thiosulphate. The method has been used with satisfactory results in this laboratory.

SODII BENZOAS.—Before weighing for an assay, the salt should be dried to a constant weight at about 120° C., which may require several hours, and a carefully made product should not lose more than 5 percent in weight by this treatment. The assay method is unpractical, because the charred mass, being in hard and compact pieces, is not extracted thoroughly by boiling water or even by boil-

ing weak acids, unless it is first reduced to a fine powder. A more satisfactory method is that of direct determination of the benzoic acid, by shaking it out with chloroform from an acid mixture and weighing it after evaporation of the solvent. To insure complete extraction it is necessary that the amount of water in the mixture be very small in comparison to the bulk of chloroform, that the shaking be vigorous and prolonged, and that not less than three successive portions of chloroform be used. Evaporation of the chloroform should be without the aid of heat and the residual benzoic acid should be dried in a desiccator before weighing.

SODII BICARBONAS.—While the salt of commerce will readily test 99 percent by the official method of titration, the amount actually present is usually somewhat less. With more exact methods of determination replacing the present one, a minimum requirement of 98 percent would be feasible. The requirement that the salt must produce a "perfectly clear" solution in water is impracticable and conflicts with the general provisions in "Introductory Notices" of the U. S. P., under "Solubility Tests," wherein traces of insoluble impurities are permitted. Results of the test for normal carbonate vary with the manner in which the details are carried out. If the solution is cooled much below 15° , stringency of the test will be decreased and the manner of adding the acid may cause considerable variation in the amount of carbon dioxide given off. In the interest of uniformity it is recommended that the temperature of the solution be adjusted to 15° , then poured, all at once, upon the 0.2 cc. of normal hydrochloric acid and the phenolphthalein, contained in a test tube of 18 to 20 mm. diameter. A titration of sodium bicarbonate with methyl orange as indicator, as officially directed, of course includes also the normal carbonate present. For determination of both, the following method of G. Lunge includes several features often ignored, but necessary for accurate work: About 5 gm. of the salt are dissolved in not more than 100 cc. of distilled water (boiled and cooled), at a temperature not exceeding 20° C., without agitation other than gentle stirring with a glass rod. About 10 gm. of pure sodium chloride are then dissolved in this liquid, which is then cooled to almost 0° C., phenolphthalein is added and normal hydrochloric acid, with the tip of the burette below the surface of the liquid, until the color is just discharged. Each cc. (O = 16) corresponds to 0.1061 gm. of Na_2CO_3 . An aliquot portion of this titrated solution is then titrated with methyl orange as indicator, in the usual manner, and the number of cc. of normal acid used in the first titration subtracted from the number required in the second. The remaining number of cc. represent the NaHCO_3 in the sample, each cc. (O = 16) corresponding to 0.08401 gm. Another fairly accurate and expeditious method consists in heating a known weight of the salt, dried over sulphuric acid before weighing, at a temperature somewhat below red heat, until the weight is constant and calculating the NaHCO_3 from the loss of water and carbon dioxide.

SODII BORAS.—Comments under *Sodii Bicarbonas* regarding "perfectly clear" solutions apply also to this salt. For an assay, the well known method of titrating a water-solution of the salt with hydrochloric acid, with methyl orange as indicator, is satisfactory, each cc. of normal acid (O = 16) corresponding to 0.101 gm. of $\text{Na}_2\text{B}_4\text{O}_7$. It is not advisable to calculate the results as $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$, as the salt, particularly when powdered, is often more or less effloresced, but the

sum of the percentages of $\text{Na}_2\text{B}_4\text{O}_7$ and of H_2O (determined by loss of weight at red heat) should not be less than 99 and the percentage of H_2O should not be more than 49 percent in crystals and not less than 42 percent in the powdered salt.

SODII BROMIDUM.—The standard might be raised to a minimum of 98.5 percent. The salt should be powdered and dried at 100° to 110° to a constant weight before weighing it for the titration with silver and the allowable water-content should be limited to 4 or 5 percent. No limit of moisture is now specified in the U. S. P., but this is desirable because it is possible to make a crystallized salt containing theoretically 2 molecules, or 25.9 percent, of water. Comments under *Potassii Bromidum* apply also to this salt.

SODII CHLORIDUM.—Results of assays by the official methods are seriously affected by presence of calcium and magnesium chlorides, which are among the common impurities in ordinary salt; the more of these is present, the higher will be the apparent NaCl content. Unless they are present only in traces, quantitative determination of them is required, as also of sulphate, another common impurity, in order to ascertain the actual percentage of sodium chloride in this salt.

SODII CITRAS.—There is no good reason for an official allowance of 3 percent of impurities other than water in this salt; a standard of 99 percent is not too high. A test for tartaric acid should be added. Comments under *Potassii Acetas* concerning the assay method apply also to this salt. Because of variability in crystal-water contents, the percentage of *anhydrous* salt found by the assay should be added to the percentage of water, determined by drying at 150° C. The sum should not be less than 99 and the percentage of water should not be more than 3 percent above the theoretical amount in crystals nor more than 5 percent below the theoretical amount in the granular or powdered salt.

SODII HYPOPHOSPHIS.—The requirement that the salt should not be alkaline to phenolphthalein conflicts with the limit test for alkalies and should be omitted. For comments on assay methods see under *Potassii Hypophosphis*.

SODII IODIDUM.—It should be allowed to contain not more than 5 percent of crystal-water, which is determined by drying at 100° to 110° C. Comments under *Potassii Iodidum* are applicable also to this salt.

SODII NITRIS.—The standard could be raised to 95 percent.

SODII PHENOLSULPHONAS.—For an assay the following method of Smith and Frey, based on the determination of phenol-p-sulphonic acid, may be used. From 0.24 to 0.25 gm. of the salt is dissolved in 50 cc. of water in a glass-stoppered flask (250 cc. volumetric flask answers best), 50 cc. of N/10 bromine solution are added, then 5 cc. of hydrochloric acid, and the stopper quickly inserted. The mixture is then allowed to stand, with occasional shaking, at a temperature of 20° to 25° C. for not less than 10 nor more than 15 minutes. The stopper is then raised just enough to introduce, without loss of bromine vapors, a solution of 2 gm. of potassium iodide in 5 cc. of water. The mixture is thoroughly shaken in the stoppered flask and the liberated iodine titrated with N/10 thiosulphate solution. The number of cc. required are subtracted from the number of cc. of N/10 bromine solution taken. Each cc. of the remainder corresponds to 0.005804 gm. of $\text{NaC}_6\text{H}_4\text{O}_4\text{S}_2\cdot 2\text{H}_2\text{O}$ ($\text{O} = 16$). If the liquid remains clear or nearly so throughout the determination, the sample may be considered sufficiently

free from interfering impurities for the results to be dependable. The salt of the market sometimes contains phenol and possibly other compounds that form insoluble bromine derivatives under the conditions of the determination and the presence of these affects the accuracy of the method in proportion to their quantity, but a carefully purified product should be practically free from them. This question may be settled by a preliminary test as follows: Addition of bromine water to 5 cc. of a cold water-solution of the salt (1 in 100), until the liquid is permanently yellow, should remain clear for two minutes after the last addition.

SODII PHOSPHAS.—Besides the impurities for which official tests are given, this salt usually contains considerable quantities of sodium sulphate. Chlorides are usually present only in traces. The various impurities must be considered in a choice of methods of assay, because of the possibility of their affecting the accuracy of results. In calculating the percentage of sodium phosphate from a determination of phosphoric acid, the plan proposed under *Sodii Boras* should be followed whenever the salt tested does not contain the full amount of crystal-water and as particularly the granular salt loses water very readily, the U. S. P. should provide for a limited shortage of crystal-water.

SODII PHOSPHAS EXSICCATUS.—It should be allowed to contain not more than 4 or 5 percent of absorbed water.

SODII PYROPHOSPHAS.—The test with molybdate solution for distinction from orthophosphate is misleading, since orthophosphate is formed from pyrophosphate through contact with the nitric acid in the reagent. Difference in the color of precipitates with silver nitrate is more reliable for differentiation and also a sufficiently delicate test to exclude excessive amounts of orthophosphate.

SODII SALICYLAS.—A substance that is permitted to have a "faint pink tinge" can scarcely be expected to produce entirely colorless solutions in all concentrations; however, a freshly-made 5 percent solution of the salt should appear colorless in a stratum of 2 cm. The purest products of the market are distinctly alkaline to litmus, though not to phenolphthalein, and the requirement that the salt "should slightly redden blue litmus paper" excludes all specimens that contain less than about 1 percent of sodium acid salicylate, $\text{NaC}_7\text{H}_5\text{O}_3 \cdot \text{C}_7\text{H}_5\text{O}_4$. If for some purposes a salt having an acid reaction is preferable, it is certain that for others the purer normal salt, which has a slightly alkaline reaction, is to be preferred. It would, therefore, seem advisable that the Pharmacopœia allow also a neutral and a slightly alkaline reaction. A test based on the decolorization of iodine is preferable to the official test for sulphites, as sodium salicylate often contains unobjectionable traces of sulphates, the presence of which makes the test inapplicable in its present form. Comments on methods for the assay of Sodium Benzoate apply also to this salt.

SODII SULPHAS.—To determine the percentage of actual sodium sulphate, it is usually most convenient to determine the sodium chloride, which is likely to be the chief impurity, and the water, then calculate the remainder as anhydrous sodium sulphate.

Sparteinae Sulphas.—The reasons for the widely varying figures given by different authorities as the melting point of this salt require investigation. These vary from 136° to 152° . Variations from 132° to 150° have been noted in this

laboratory, all specimens meanwhile conforming in other respects to the U. S. P. standard. The odor of free sparteine is considered by some persons to resemble that of aniline and as for that reason the latter might be used as an adulterant or substitute, a test for it is directed by several pharmacopœias, somewhat as follows: A mixture of about 0.1 gm. of sparteine sulphate, 0.5 cc. of chloroform, and 0.5 cc. of alcoholic potash solution (about half-normal strength) should develop no isonitrile odor when heated.

SPIRITUS AETHERIS NITROSI.—The U. S. P. gives a standard of strength only for the freshly made spirit and it would seem that it might still be considered to conform to the U. S. P. standard after having lost the greater part of its ethyl nitrite on keeping. The British and Netherlands Pharmacopœias allow a deterioration from the original strength of not more than 30 and 20 percent, respectively. A similar provision should be made by the U. S. P., with the requirement that the spirit should not be dispensed if it contains less than a stated amount of ethyl nitrite, perhaps 3.5 percent.

SPIRITUS AMMONIAE.—Instead of merely stating the specific gravity to be "about 0.808 at 25° C.," it would be better to definitely require it to be not more than 0.805, as a higher specific gravity indicates presence of an excessive amount of water. The permanganate test, as given under Ammonia Water, requires slight changes to make it applicable to the spirit, as the alcohol in the mixture decolorizes permanganates; the liquid, which is warm from the reaction of ammonia and sulphuric acid, should be cooled to about 20° C. before addition of the permanganate and this should be increased to 0.2 cc. For the titration the spirit is preferably weighed in a flask containing water, to minimize the loss of ammonia through volatilization.

SPIRITUS GLYCERYLIS NITRATIS.—Upper as well as lower limits of nitroglycerin contents should be specified for such a potent substance, since an exact 1 percent is unattainable. It might be advisable to permit a variation of 1 to 1.05 percent, or 0.97 to 1.02 percent. The second reference in the U. S. P. to the specific gravity contradicts the first and should be omitted. For an assay the method of the Danish Pharmacopœia seems well adapted; it is as follows: To about 10 gm. of the spirit add in a flask of suitable size 2 cc. of caustic soda solution (1 in 10). After a few hours warm the liquid and finally evaporate the alcohol on a water-bath. Dissolve the residue in 10 cc. of water, add 2 cc. of hydrogen peroxide solution (3%) and warm the liquid at first gently, then heat it to boiling. Transfer it to a 500 cc. boiling flask, using 10 to 15 cc. of water for rinsing the first flask. Add 12 cc. of a mixture of 1 volume of sulphuric acid and 2 volumes of water, then 5 gm. of reduced iron. Insert in the neck of the flask a test-tube filled with cold water and warm the flask at such a rate that the liquid will boil in 4 minutes, as shown by the dripping of water from the test-tube. Boil the mixture about 1 minute, then add 150 cc. of water and 25 cc. of caustic soda solution (1 in 2). Connect the flask quickly with a condenser and distill the ammonia into a receiver containing 25 cc. of N/10 hydrochloric acid. Titrate the excess of acid and calculate the percentage of nitroglycerin from the amount of ammonia found.

STRONTII BROMIDUM.—It is not "very deliquescent" unless it contains abnormally large quantities of calcium halides, nor is it "occasionally efflorescent,"

either when pure or when it contains the usual impurities within U. S. P. limits. The effloresced appearance of some crystalline products of the market is generally caused by drying at elevated temperatures. A salt of U. S. P. standard of purity, which may contain small amounts of calcium compounds, is slightly deliquescent if it does, but is permanent in the air when free from them. Titration of the hydrated salt with silver nitrate is not always sufficient to determine the percentage of $\text{Sr Br}_2 \cdot 6\text{H}_2\text{O}$ in it. Only when the salt is practically free from all impurities except strontium chloride and contains just the theoretical amount of water will the official method give fairly accurate results. It would be quite feasible, however, for the U. S. P. to demand almost total absence of calcium and then only the variation in water content need be considered. To overcome this it is only necessary to dry the salt to a constant weight at 180° and titrate a weighed quantity of the anhydrous salt. The ratio of strontium bromide and chloride can then be readily calculated from the amount of silver nitrate solution required for precipitation.

STRONTII IODIDUM.—Because of variability of water contents and possible presence of calcium salts, titration with silver nitrate is not a very suitable assay method. One of the several well-known methods for the direct determination of iodine in presence of chlorine would be preferable, combined with a determination of strontium if much calcium is present.

STRONTII SALICYLAS.—Concerning the requirement that "its aqueous solution should be colorless," comments under *Sodii Salicylas* apply also to this salt. An assay based on the weight of sulphate formed is not reliable, as it includes such impurities as calcium salts and strontium or alkali chlorides, which may be present and for which no tests are given. A more useful quantitative determination would be that of the salicylic acid, by a method such as is discussed in these notes under *Sodii Benzoas*.

STROPHANTHINUM.—Strophanthin-Kombé of commerce is amorphous, not crystallized as this substance is described in the U. S. P. The melting point should be omitted, as official strophanthin is a mixture of variable composition.

STRYCHNIA.—The melting points of strychnine and its official salts are variable because of partial decomposition by the required heat; determination of them is needless for identification and valueless for ascertaining purity. As traces of harmless impurities other than brucine, sometimes present in strychnine and its official salts, may produce an orange color with concentrated nitric acid, it is preferable to modify the test for brucine as has been done by some other pharmacopœias, somewhat as follows: 1 cc. of a mixture of equal volumes of nitric acid and water, mixed with about 0.1 gm. of strychnine or its official salts, may produce a yellow, but no red or reddish color. The delicacy of the test is not appreciably diminished by the change.

SULPHONETHYLMETHANUM.—The melting point should be replaced by a range of 75° to 77° , which limits should be definitely required as a test of purity. In the permanganate test 20 cc. of the filtrate from the preceding test should be taken and 0.05 cc. of N/10 potassium permanganate (measured with a 1 cc. pipette). As the test now stands, it is too vague to be of use.

SULPHONMETHANUM.—It should be required to melt between 125° and 127° and the permanganate test should be made as described in the preceding.

SULPHUR LOTUM.—This, and sublimed sulphur, from which it is made, are mixtures of varieties soluble and insoluble in carbon disulphide and the statement "readily soluble" should be changed to "partially soluble." Determination of the percentage of actual sulphur, by oxidation to sulphuric acid and weighing as barium sulphate, is not generally required to ascertain if a given specimen conforms to the minimum standard of 99.5 per cent. An indirect determination, by deduction of the amount of non-volatile matter found, is generally sufficient and likely to be more accurate with the pharmaceutical grades of sulphur.

SULPHUR PRÆCIPITATUM.—The requirement as to non-volatile matter is too stringent. Other pharmacopœias are more lenient; the German, e. g., allows 0.5 percent. See also under *Sulphur Lotum*.

SULPHUR SUBLIMATUM.—See comments under *Sulphur Lotum*.

SYRUPS ACIDI HYDRIODICI.—In the assay, the syrup should be diluted with considerably more water than is directed, before admixture with silver nitrate, to prevent reaction of the latter with the hypophosphorous acid present. Insertion of a test for excessive amounts of other halogens would be desirable.

SYRUPUS FERRI IODIDI.—The comments under the preceding apply also to this preparation.

TEREBENUM.—It appears to be still an open question what the composition should be of the mixture of hydrocarbons known as terebene. This is illustrated by the boiling ranges given by different authorities: 160° to 170° (U. S. P.); 156° to 180°, not over 15 percent below 165° (Brit. Pharmacopœia; Brit. Phar. Codex); 156° to 160° (Hager's Phar. Praxis); 155° to 160° (Schmidt's Phar. Chemie); 170° to 185° (Power and Kleber, in 1894). Dipentene, which is generally considered the chief constituent, boils at 175° to 176° (Schmidt), or at 181° to 182° (Wallach; Brass), and it is therefore not likely that the U. S. P. product contains very much of it. If dipentene is the most important constituent, therapeutically, which appears not to have been demonstrated so far, then the boiling range proposed by Power and Kleber should certainly be specified in preference to that of the U. S. P. The subject requires further investigation, both pharmacological and chemical. A change in the boiling interval would require also a change in specific gravity limits. The official directions for determining resinous substances do not lead to reliable results, as exposure to air during evaporation causes formation of resins and greatly increases the amount of non-volatile residue. By vacuum evaporation at about 100° residues of 0.2 to 0.3 percent were usually obtained from samples that yielded 5 to 10 times as much when the U. S. P. directions were followed. In absence of a suitable vacuum apparatus atmospheric oxidation can be prevented to a large extent by transferring the residue remaining in the flask used for the boiling point determination to an evaporating dish, with the help of ether, evaporating rapidly or a water-bath, then drying at 100°. From 0.5 to 0.7 percent of resin were obtained in this manner.

TERPINI HYDRAS.—The official statement that it is permanent in the air does not agree with practical experience, which shows that it is somewhat efflorescent and often does not contain fully 1 molecule of crystal-water. For that reason a determination of the melting point, as a test for organic impurities, is preferably made after removal of the water by drying the finely powdered substance over

sulphuric acid to a constant weight, as the melting point of the hydrate varies with the degree of hydration. Anhydrous terpin should melt between 102° and 105°.

THYMOL. The specific gravity should be stated as being "about 1.030." In place of the requirement of an impossibility, that a crystal leave *no* residue on volatilization, it would be better to require that a quantity of not less than 1 gm. should leave not more than 0.5 mg. of residue. An alcohol-solution (1 in 20) should be required to be neutral to litmus paper wetted with water.

THYMOLIS IODIDUM. Although chemically pure dithymol diiodide would contain 46.2 percent of iodine, the products of few manufacturers meet the U. S. P. specification requiring a content of 45 percent, owing to the costly methods of manufacture necessary to attain that standard. Admixture with chlorine derivatives of thymol usually brings the iodine contents down to from 42 to 43 percent. A minimum standard of 42 percent would, therefore, seem to be required in the dried product. An allowance of not more than 1 percent of moisture should also be made, as this substance may appear dry and yet contain a large amount of moisture. G. M. Beringer has pointed out that thymol iodide of the market is a mixture of several organic iodine compounds differing in solubility. This fact need cause no surprise, as it has been known for many years (Patent of Farbenfabriken verm. Bayer & Co., 1889) that thymol iodide is converted into a white iodothymol (in which iodine is considered to be linked directly to carbon) through several agencies, such as treatment with caustic alkalis, thiosulphates, etc. It seems probable that appreciable quantities of iodothymol are formed by the usual procedures of preparing thymol iodide and it is not unlikely that further conversion is induced by the action of light and heat during washing, drying, and afterwards, as temperature and light are known to influence the color of the product to a marked degree. The drug trade demands chiefly a product of light buff color and it may be found on investigation that this contains a much larger proportion of iodothymol than the dark, reddish-brown product. Thymol iodide should not yield more than 0.5 percent of ash; the present allowance of 3 percent is entirely too liberal. Differences in methods for the determination of the iodine have given rise to controversies concerning iodine contents. The writer is indebted to Mr. Henrik Knudsen for calling his attention to Groeger's method for the determination of iodine in presence of chlorine, the following adaptation of which has been found in this laboratory to be reliable: Mix thoroughly in a mortar 0.2 to 0.25 gm. of dried thymol iodide with about 3 gm. of dried sodium carbonate and transfer the mixture to a crucible. Remove traces of the mixture adhering to the mortar with about 1 gm. more of the sodium carbonate and cover with it the contents of the crucible. Heat the mixture moderately, gradually increasing to, but not exceeding, dull redness, in the covered crucible, until the mass is completely carbonized. When sufficiently cooled, extract the residue with boiling water and wash it on a filter with boiling water until the washings cease to react with silver nitrate. Heat the combined liquids, which should measure about 150 cc., on a bath of boiling water and add a solution of potassium permanganate (1 in 20) in small portions, until the hot liquid is permanently pink. Add just enough alcohol to remove the pink tint, cool the liquid to room temperature, and dilute it to 200 cc. Mix

well and filter through a dry filter, 9 to 10 cm. in diameter, and reject the first 50 cc. of filtrate (to avoid any error through adsorption). To 100 cc. of the subsequent clear filtrate add about 1 gm. of potassium iodide and an excess of diluted sulphuric acid, then titrate the liberated iodine with N/10 sodium thiosulphate. Each cc. ($O=16$) corresponds to 0.002115 gm. of iodine.

VANILLIN.—The results of G. A. Menge, who found 5 commercial samples to have an average melting interval of 81.9° to 82.5° (corr.), with only slight variations, indicate that the figures of the U. S. P., 80° to 81° , which are also given by most other authorities, are too low and should probably be replaced with a required interval of 81° to 83° . Adulteration with such substances as acetanilid, terpin hydrate, coumarin, etc., which is occasionally reported, is detected most conveniently by deviations in the melting point.

VERATRINA.—The melting point should either be omitted or given as a roughly approximate figure, since it must necessarily vary considerably with a mixture such as this. Presence of many foreign alkaloids may be detected, according to various authorities, by addition of platinic chloride to an alcohol-solution of veratrine (1 in 20); no precipitate or turbidity should be produced.

ZINCI ACETAS.—Stringent official tests for chlorides and sulphates require the salt to be practically chemically pure in order to meet the U. S. P. requirements, which raises its cost unnecessarily. If the dilution of the solution for these tests be extended to 1 in 200, the requirement can be met more readily. A salt of this degree of purity, unless it is found to contain alkali or alkali earth compounds, for which no tests are given, scarcely requires quantitative determinations to prove conformity to the specified minimum standard. Precipitation as sulphide and weighing as such is doubtless the most accurate of the usual methods.

ZINCI CARBONAS PRAECIPITATUS.—To prepare solutions for making tests of purity hydrochloric acid is to be preferred to sulphuric acid and enough should be taken to dissolve the salt completely. When the official directions are followed, some impurities may be left on the filter and escape detection; e. g., lead, if present, will be filtered out almost entirely, as sulphate. The weight obtained as a result of the official assay includes, besides the allowed traces of sodium carbonate, iron compounds, and other heavy metals, also other fixed impurities of which no account is taken in the tests of purity, such as basic zinc sulphate, presence of which cannot be entirely avoided, and sodium sulphate, which may be present through incomplete washing of the salt. To determine the zinc combined as basic carbonate, the official method for the assay of Zinc Oxide would be more suitable, with deduction of the acid required to neutralize any sodium carbonate in the sample, but the minimum standard would have to be lowered to something like 70 percent of Zn O. Possible presence of alkali earth carbonates would also have to be considered in the use of this method of determination.

ZINCI CHLORIDUM.—It is not feasible to determine the water contents of this salt by ordinary methods, as the heat required to render it anhydrous also expels appreciable quantities of hydrochloric acid and probably also volatilizes some zinc chloride. It is, therefore, impracticable to base the standard of purity on the anhydrous salt, as is done in the U. S. P. It would be better to base it upon the salt in its original condition, but in view of its strongly hygroscopic nature the minimum requirement should probably not be placed higher than 90 percent of

Zn Cl_2 . Suitable tests to exclude excessive amounts of alkalis and alkaline earths should then be added. The melting point varies much in accordance with variation in water contents, which makes the official melting point inapplicable. A water-solution of the salt (1 in 20) cannot be expected to be "clear or at most only very slightly opalescent," as the temperature required to remove most of the water causes formation of enough basic salt to produce a rather turbid solution. The test for sulphate is so stringent as to increase the cost of the salt unnecessarily.

ZINCI OXIDUM.—The official test for chlorides is rather too stringent; traces are unobjectionable and should be allowed.

ZINCI PHENOLSULPHONAS.—In view of the impurities this salt may contain, precipitation as sulphide is probably the most reliable of the ordinary methods for a zinc determination. The medicinal value should doubtless be based chiefly on the zinc content and only secondarily on the phenolsulphonic acid content. The latter may be determined by the method recommended under *Sodii Phenol-sulphonas*, the quantity of sample being increased in proportion to the greater molecular weight.

ZINCI STEARAS.—A residue not exceeding 0.5 percent should be allowed in the test for alkalis and alkaline earths, the present requirements being impracticable. The present limits specified for zinc contents are also impracticable and should be replaced by a range of 13 to 15 percent of ZnO . In presence of alkalis and alkaline earths the official assay method gives too high results and the sulphide method, after elimination of the fat acid, would be preferable. To the tests for impurities one should be added to limit contamination with lead and other heavy metals. The stearic acid, separated from the salt by heating with weak hydrochloric acid and thoroughly washed with hot water, then kept in contact with ice for 2 hours or at 10°C . for 24 hours, should meet the melting point requirements of the U. S. P. for stearic acid.

ZINCI SULPHAS.—The small amount of zinc chloride, which the U. S. P. allows to be present in this salt, may impart an acid reaction to alcohol, being soluble in it. Hence the official test for free acids is not reliable. A better and also simpler test consists in slightly coloring a water-solution of the salt (1 in 20) with methyl orange. No acidity should thus be shown.

ZINCI VALERAS.—Loss of valeric acid during unavoidable exposure to the air renders the salt partially insoluble in water and it may then no longer be acid to litmus, as officially specified. On account of the instability of this salt, the requirement of a minimum of 99 percent of normal salt can be met only by freshly made products, unless they are kept in air-tight containers. It would be unfair to apply the rigid pharmacopoeial specifications to specimens that have been on the pharmacist's shelves for some time.

The author deems it advisable to state more clearly than was done at the beginning of this series of notes, that he alone is responsible for the views and opinions expressed in the several installments thereof. While these views and opinions were formed largely as a result of the facilities extended by the laboratories of the Powers-Weightman-Rosengarten Company, of Philadelphia, Pa., they do not necessarily coincide with those of the officers of said company.

Papers Presented to Local Branches

A HOME FOR THE A. PH. A.*

H. V. ARNY, PH. G. PH. D., NEW YORK, N. Y.

In the November number of the Journal of the American Pharmaceutical Association (Vol. I, p. 1189), Editor Beal, with his usual skill crystallized what has been during the past fifteen years scarcely more than an intangible hope; the desire for a building which will be for American Pharmacy, what the Chemists Club Building in our own New York is to American Chemistry; what the Hofmann Haus in Berlin is to German Chemistry; what the headquarters of the Pharmaceutical Society in Bloomsbury Square are to the English pharmacist.

Such should be the proposed home of the American Pharmaceutical Association and such a home will be erected, if we American pharmacists once realize what such a centre would mean to each of us.

One of the greatest detriments to present-day pharmaceutical progress is the lack of pride of craft on the part of the pharmacists themselves. In this respect we modern pharmacists are far behind our predecessors of one or two centuries ago, when membership in the Apothecaries Guild was considered a precious possession of those engaged in the art of mixing drugs. In this respect we are still farther behind the modern physician who is not merely proud of his profession, but who is willing to express his pride in the tangible form of handsome buildings as organization headquarters. There is scarcely a city of any size in this country which does not possess a building owned and supported by the physicians of that place, containing a well-equipped library and suitable rooms for meetings; this, of course, in addition to the local medical colleges.

The desirability of the two types of buildings becomes apparent without giving the matter much thought. The college building proclaims to the public that the active representatives of a profession have enough faith in their calling to recommend it to the coming generation of students; the association building is a public affirmation of the fact that the members of the profession have sufficient enthusiasm over their calling to be willing to contribute funds for the betterment of their craft and indirectly for the uplift of themselves.

Under the present conditions in pharmacy, the college—at least in large cities—stands for both purposes. It is an institution representing the sacrifices of those active in the calling for the sake of those who are to follow; it also is, or should be the rallying point for the pharmaceutical activities of the community which it serves and this is assuredly the case with the institution at which we are now gathered and with our sister college in Kings county. The very building points out to the passer-by that pharmacy is a power since its followers are will-

*Read before the New York Branch, March 10, 1913.

ing to transmute some of the profits of their calling into the stones of a building; that pharmacy has a purpose, since the members of the craft stand ready to make sacrifices of time in aid of its institutions.

For over a decade, thinkers in our calling have been asking themselves whether the time was not ripe for a monument to American Pharmacy, other than the school of pharmacy and it is not strange that holders of this idea have been largely those deeply interested in the college, laymen as well as teachers, for it is almost a dictum that the ones who preach the doctrine "charity begins at home" are less apt to help the home folks than those who are also willing to work for the world field.

One of the first thoughts in this direction was expressed at the Baltimore meeting of the American Pharmaceutical Association of 1898 (Proceedings 40, 225) when Leo Eliel in his report as chairman of the A. Ph. A. Pharmacopoeial Committee spoke of the need of a research laboratory for pharmacopoeial work and again in 1903 when Professor Kremers in his report as chairman of the Committee on Historical Pharmacy (Proceedings 51, 541) urged the establishment of a national pharmaceutical museum.

During 1901, Professor Kraemer inaugurated in the American Journal of Pharmacy a discussion of a memorial to Professor Procter, and several of those contributing to the discussion urged a Procter memorial laboratory. And now Dr. Beal gives the subject a new and practical turn by suggesting that all these several ideas be condensed into an A. Ph. A. home.

In viewing the situation, the first question suggesting itself is the scope of the building and fortunately we have three models, which can be studied before the A. Ph. A. Home is consummated. The first is the headquarters of the Pharmaceutical Society of Great Britain, which I am not competent to discuss, since it has never been my privilege to visit it. This however, as I understand, is based on the college idea with the organization idea more or less in the background. The second is the Chemists Club of our own city, where the social idea is preponderant, but which possesses library and meeting place facilities that would be difficult to better. The third is the Hofmann Haus of Berlin (A. J. P., 83, 1901, 349) where the organization idea was the first thought; where the primal aim was the providing of offices and permanent meeting place for the German Chemical Society. This building also possesses splendid library and laboratory facilities for research workers, but gives little attention to the social side. This third idea, should, I think, be the aim of the A. Ph. A. home. It should provide room for the following:

1st. *For officers of the Association and of its Journal.* This is a foregone conclusion.

2nd. *For a permanent exhibit of historic pharmacy.* Those of us who saw the magnificent exhibit gotten up during the semi-centennial meeting of 1902, know the interest that exhibit created not only among the drug trade, but also among the general public; while the exhibit of ancient pharmacy at the Germanic Museum at Nuremberg is one of the most popular parts of that world-famed collection of medieval relics.

3rd. *For a pharmaceutical library.* One is almost tempted to express the hope

that the famous Lloyd library and the A. Ph. A. home will some day be under the same roof.

4th. *For research laboratories.* None of the organizations cited above—the Pharmaceutical Society of Great Britain, the Chemists Club nor the German Chemical Society—have more legitimate need for research laboratories than has the American Pharmaceutical Association, if the research done therein is on the lines suggested by Dr. Beal; problems dealing with the revision of the National Formulary, the Druggists' Recipe Book, with the work of the Committee on Unofficial Standards and possibly with the revision of the Pharmacopœia. For even though the latter is independent of the A. Ph. A., much of the work of revision is done by active A. Ph. A. members and that part could well be performed in the suggested research laboratories.

Two features of the buildings proposed as models, which need not be emphasized in the A. Ph. A. home, are

1st. *Meeting rooms.* As the A. Ph. A. meets at different places, the national body has but little need for a gathering place in the A. Ph. A. home, but it might be possible that the local druggists would provide funds for that purpose in order that their organizations would have a meeting place.

2nd. *The social side* need not be considered, although it might prove a good investment to ultimately have some furnished rooms to rent those members of the Association going to headquarters for business or for research work.

Such are the outlines of what an A. Ph. A. home might mean to American pharmacy, and forthwith I think I hear a score of objections and difficulties. 1st. *Where are we going to get the money?* That is the first draw back to every great enterprise and it is to me scarcely short of miraculous how a meritorious object does eventually get the cash. The same query has been asked every time a new college building is broached; the same question was put, I am sure, when the Chemists Club building was suggested, but somehow the buildings get erected, if energetic men take hold of the work. One phase of the money getting seems essential and that is that the building must take the character of a memorial to our great departed pharmacists, and notably to William Procter. Let us therefore hope that some arrangement be made whereby the money so far collected for the Procter Memorial may eventually develop into a greater memorial in the form of an A. Ph. A. home.

2nd. *Where will the building be put up?* The geographical question is a serious one in this great country of ours, and is one which must be met in a broad spirit. Of course, we of New York, wish the building erected here, or at least on the Eastern seaboard, but the great West is yet to be heard from. But wherever it may be located, let us all—North, East, South and West—join to make the enterprise worthy of American pharmacy.

3rd. *Who will use the research laboratory?* As pointed out by Dr. Beal, a great need in the preparation of the National Formulary and of the Recipe Book is an impartial trying out of every formula proposed, or every change suggested. A prominent and forceful member of a revision committee can almost invariably persuade a majority of the committee to put his pet recipe into the work in question and as a result defective formulæ sometimes slip in. The Association

owes it to itself to prevent this, using some of the profits accruing from the book in question for employing a competent laboratory worker to try out the accepted recipe before it is definitely sponsored by the Association, and such a worker will need a laboratory. Then too, such a laboratory would prove a boon to the many earnest workers at smaller institutions which lack proper research and library facilities. This hindrance to their talents means a distinct loss to pharmaceutical progress and to such men the facilities of the proposed laboratory should be extended, of course, under proper restrictions.

And so let us all give the project of the A. Ph. A. our careful attention and after the plan has been worked out in sufficient detail to show its feasibility let us, each and every one, do our best to bring the idea into realization.

THE PROPOSED A. PH. A. HOME.*

H. M. WHEPLEY, PH. G., M. D., ST. LOUIS.

It is not necessary to study political economy nor social science in order to learn that the citizen who has a home is a more desirable part of the body politic than the one who is adrift in the world without fixed abode. The man who owns his home is better prepared for good citizenship than he who rents from a landlord.

I hold that in respect to usefulness the same conditions apply to organizations of the class to which belongs the A. Ph. A.

It is true that the society has lived and prospered and served the calling of pharmacy well for sixty-one years without occupying a real home, much less owning one. This is true because the membership has been such that difficulties and lack of facilities did not discourage the officers and committees in doing the best they could under the circumstances. The good work of the six decades has been accomplished in spite of the fact that the A. Ph. A. did not provide a parental roof for headquarters. What might have been done if a home had been established in 1852 and maintained up to date is a matter of legitimate and perhaps profitable speculation. But it is my purpose to concentrate your attention on the demands of the present and the possibilities of the future.

Pharmacy has passed through many changes since the A. Ph. A. was organized to "improve the quality of medicines in the market and encourage proper relations between pharmacists, physicians and the public; to regulate apprenticeship, suppress empiricism, create and maintain standards of authority in education, theory and practice of pharmacy and last but not least to afford the greatest protection to the public."

With conditions as they are today in pharmacy and medicine, the A. Ph. A. with its avowed purpose has new opportunities and must meet new demands and accept new duties.

The A. Ph. A. is the only organization in the world where any reputable person sufficiently interested in the welfare of pharmacy to ask admission and

*Read at the February 28 meeting of the St. Louis Branch of the A. Ph. A.

willing to subscribe to and observe the constitution and by-laws is welcome. Can you imagine a more cosmopolitan pharmaceutical body. A place where we find working for the common good, the apprentice, clerk, proprietor, jobber, manufacturer, teacher, author, editor and consultant. As first pointed out by Secretary Beal, it is the "great clearing house in American pharmacy."

An A. Ph. A. home would first of all emphasize the permanency and make more apparent the stability of the organization.

The historical instinct is asserting itself among the American people and with a fireproof home we can collect and preserve the important material which pharmacists should contribute to the history of their country.

The organizers of the A. Ph. A. little realized the possibilities of the National Formulary. With a well equipped laboratory at headquarters, the work of revising this authority can be greatly facilitated. The work on the A. Ph. A. Recipe Book will also be furthered if an experimental laboratory is at hand for the final proving of the formulas.

With the continued growth of the A. Ph. A. would come additional facilities for the development of activities within the scope of the A. Ph. A. but not possible as long as we are confined to itinerant headquarters.

Lastly, the spirit of patriotism which suggests honoring the memory of such men as Procter, Parrish, Maisch, Rice, Curtman, Ebert, Hallberg and Cook, spurs us on to work for the future of pharmacy and the even greater development of the A. Ph. A. What more fitting memorial can be erected to the memory of those who lived and labored for pharmacy, than a permanent home for the headquarters of the A. Ph. A., its official periodical and other publications?

The association has special funds which will grow more rapidly under home influence and maternal guidance. The A. Ph. A. holds about fifty thousand dollars in permanent, trust and current funds and this has been collected in spite of the fact that "a rolling stone gathereth no moss."

The fund necessary to build the home should represent contributions from every interest in legitimate pharmacy.

The question of a location need not now be discussed. Let us do our part towards providing the ways and means for the home.

TIKTURE OF IODINE.*

L. F. KEBLER, CHIEF DRUG DIVISION, BUREAU OF CHEMISTRY, U. S. DEPARTMENT OF AGRICULTURE.

This commodity has probably been examined more frequently than any other simple drug offered for sale by the retail trade, and I know of no medicinal agent which has more frequently been found wanting. Observations and investigations have frequently shown that when iodine was dissolved in simple ethyl alcohol there was a great tendency for the iodine to be changed into hydriodic acid and other compounds, thus actually lowering the free iodine content, and the

* Read before the City of Washington Branch, February 12, 1913.

diminution increased with the age of the preparation. Experiments conducted to obviate this difficulty indicated that the presence of potassium iodide tended to inhibit the usual combination of the iodine and thus increase the stability of the tincture. The method outlined for the manufacture of this commodity by the last (8th) revision of the U. S. Pharmacopœia prescribes the use of a certain amount of potassium iodide. The shortcomings of the tinctures available on the market have, however, not been materially reduced. Almost every State Board which has taken up this question has found that a large number of the samples are deficient in iodine content. This shortcoming cannot now be so fully ascribed to deterioration, neither can it be ascribed to difficulties in manufacture, because the process of manufacture is extremely simple.

During the past few years a considerable number of samples of tincture of iodine have been examined in the Bureau of Chemistry. The samples shipped in to interstate commerce were found to comply closely with the pharmacopœial requirements. All of them contain the requisite amount of potassium iodide. A goodly number of samples were collected in the District of Columbia and analyzed with the following results:

Iodine,		Potassium Iodide		Alcohol, % Volume	Declaration
Grams per 100 cc.	% Variation ¹	Grams per 100 cc.	% Variation ¹		
1.97	71.5	1.3	74	86	Correct
3.42	50	None	100	93.5	Not declared
4.40	36	5.38	7.5	85	Not declared
5.04	27	None	100	94.4	Not declared
5.08	26	3.03	40	95	Small type
5.09	26	Trace	100	91	Correct
5.36	22	2.1	58	95	Correct
5.52	19.5	5.30	6	95	Not declared
5.57	19.5	5.81	17	92.5	Not declared
5.81	15	5.02	None	92.5	Correct
5.88	14.5	None	100	95	Not declared
5.89	14.5	None	100	92.8	Not declared
6.06	12.5	6.82	36	94.5	Correct
6.09	11	1.02	80	93.5	Not declared
6.11	10	1.93	1	95	Correct
6.18	10	5.37	7	91	Correct
6.18	10	4.45	11	93	Correct
6.24	9	4.22	13.5	88	Correct
6.29	8	2.79	46	91	Not declared
6.29	8	1.61	8	91	Small type
6.32	8	2.58	48.5	91	Not declared
6.34	7.5	None	100	93.6	Small type
6.36	7.5	3.81	23	92.5	Not declared
6.48	5.5	4.92	2	95	Correct
6.48	5.5	3.81	24	88.5	Correct
6.49	5.5	5.34	7	95	Small type
6.73	.5	6.52	30	95	Correct
6.75	.5	2.42	51.5	96	Correct
6.76	.5	3.82	24	85.50	Small type
6.78	....	2.46	51	90.5	Correct
6.80	....	3.95	24	91	Not declared
6.80	....	3.49	30	86.5	Not declared
6.84	....	5.56	11	93	Incorrect
6.85	.5	5.1	2	92.72	Correct
6.90	....	0.97	80.5	95	Small type
6.97	.5	None	100	91.5	Small type
7.00	2.0	5.79	16	91	Not declared
7.03	2.5	5.52	10	91	Small type
7.04	2.5	5.00	None	92.5	Correct
7.18	4.5	4.58	8.5	89.5	Correct
7.21	4.5	5.17	3	90.5	Correct
7.21	4.5	5.67	13.5	88.50	Not declared
7.24	5.5	5.11	3	90	Not declared
7.58	10.5	5.12	2	94.5	Correct
7.95	15.6	4.50	10	86	Not declared
8.07	17.5	4.38	12.5	90	Small type
8.11	18	2.86	23	91.50	Not declared
8.11	18	6.00	20	95	Correct
8.37	21.9	5.45	9	89	Not declared
9.26	35	5.23	4.5	89.5	Not declared

¹N. B.—The percent variation in above analyses is calculated to the nearest half percent.

The pharmacopœial tincture contains about 6.86 grams of free iodine and 5 grams of potassium iodide in 100cc. The range of variation (1.97 to 9.26 grams per 100 cc.) is certainly remarkable. What real valid excuse can be offered for either of the above extremes? Furthermore, is there any substantial reason for some of the other variations? The permissible variation from the standard must be met sooner or later. Shall it be stringent or reasonable? If reasonable shall the variation be 5 percent or 10 percent or 20 percent? Considering that the adjective "about" qualifies the amount of free iodine that should be present in the tincture, about 60 percent exceed a 5 percent variation, 40 percent a 10 percent variation and 18 percent a 20 percent variation. I do not believe many manufacturers will contend for or advise a 20 percent variation in that it would not only savor of carelessness but actually encourage it. Is then a 10 percent variation either way from the standard, reasonable, fair and just to the manufacturer, the consumer, the physician, etc., or is it desirable to be more stringent?

Suggestions are invited either in the columns of this Journal or otherwise. The free iodine is the essential factor of this tincture, but the potassium iodide and percentage of alcohol must also be considered. The conditions noted above relative to the variability of the free iodine also holds for potassium iodide. The variation ranges from no potassium iodide to 6.82 grams per 100 cc. Discussion in this connection is also invited.

THE NEED FOR RESTRICTING THE INTERSTATE TRAFFIC IN HABIT FORMING DRUGS.*

M. I. WILBERT.

It is generally recognized that few if any trades or professions are more generally protected, more variously restricted or more thoroughly hampered by laws and regulations than is that portion of the drug business that is usually defined as the practice of pharmacy. On the other hand there are few if any occupations that offer greater possibilities for immunity and profit to the individual who is willing to ignore the letter, or even the spirit of existing laws and regulations than does this same retail branch of the drug business.

To illustrate it is but necessary to call attention to the profitable business frequently done by the drug store saloon keeper in prohibition territory and the comparative immunity that is assured the dope distributing druggist or nostrum peddler who is willing to restrict his business to interstate traffic in these drugs.

Even the intrastate traffic in drugs of this type appears to be safe and profitable because of the usual lack of funds and energy to enforce existing legislation within the State.

Recognizing the existing shortcomings it is not surprising that law abiding physicians and pharmacists generally are desirous of providing efficient means for restricting the sale and use of narcotic or habit forming drugs and are par

* Read before the City of Washington Branch, March 12, 1913.

ticularly anxious to refute, in a definite and positive way, the repeatedly made assertion that medicine and pharmacy are at fault in fostering the illegitimate and unnecessary spread of the habitual use of narcotic drugs.

A review of the history of existing legislation amply evidences the fact that physicians and pharmacists have ever evidenced an appreciation of the need for restricting the sale and use of harmful and possibly habit forming drugs and practically all of our present day laws had their origin with one or the other branch of the professions interested in medicine.

As an illustration of what has already been accomplished it may be interesting to note that of the 55 political divisions of the United States, as enumerated in Public Health Bulletin No. 56, no less than 48 have laws designed to restrict the sale and use of cocaine. Twenty-nine of these laws include a reference to alpha and beta eucaine.

Twenty political divisions have laws designed to prohibit or restrict the opening of opium dens and 30 political divisions restrict the sale of opium. Of the latter laws, 7 include all alkaloids of opium, 27 mention morphine, 5 mention codeine, 16 mention heroin and 16 include derivatives of these substances.

It may also be interesting to note that 16 political divisions restrict the sale of hydrated chloral and that in 9 of the divisions unauthorized possession of one or the other of the enumerated drugs is unlawful or evidence of unlawful intent.

With all of these many and varied laws, or possibly because of them, the abuse and habitual use of the alkaloids or derivatives of coca and opium have increased tremendously during the past two decades and varied suggestions have been made in recent years to restrict and regulate the interstate traffic in drugs of this type so as to facilitate or at least permit of the enforcement of local or state laws in accordance with the spirit that prompted their inclusion in the statute books.

Physicians and pharmacists generally have recognized the need for interstate regulation and have endorsed many if not all of the measures that have been proposed from time to time. Without recalling any number of these endorsements two of the more recent may be quoted for illustration of the spirit that prompted them.

"The National Drug Trade Conference in session in Washington, D. C., this fifteenth day of January, 1913, herewith submits by unanimous resolution that this Conference is heartily in favor of Federal Legislation of such a nature as to bring under control the importation and the interstate traffic in so-called habit-forming drugs in such a manner as to prevent their illegitimate use, without placing unnecessary burdens upon the manufacturer, jobber, retailer, physician, or veterinarian."

The following resolution was adopted by the Ninth Annual Conference on Medical Legislation, held in Chicago, February 25, 1913:

"Whereas, several bills intended to regulate interstate commerce in habit forming narcotic drugs have been introduced in Congress;

Resolved, that the Council on Health and Public Instruction and the members of the Annual Conference on Medical Legislation of the American Medical Association hereby express their approval of all legislative efforts which may be neces-

sary to restrict the employment of habit forming drugs to proper and legitimate uses."

Up to the present time the effectual opposition to the enactment of a law designed to regulate the interstate traffic in narcotic drugs has emanated from wholesale dealers and manufacturers who fear the imposition of irksome and totally unnecessary restrictions in the way of keeping records and the practical difficulties of determining whether or no an order from an unknown or even from a known source is authentic.

Another source of opposition is due to the objections of law abiding physicians and pharmacists who feel that some of the proposed restrictions are in direct conflict with the provisions of local laws and who are not willing knowingly to assume responsibilities that cannot be lived up to.

The former of these two objections has been effectually eliminated by the proposition endorsed by the National Drug Trade Conference at its meeting in the City of Washington on January 15, 1913, to restrict sales at wholesale to orders on an official blank provided by the Commissioner of Internal Revenue. This proposition has been included in H. R. 28,277, and can readily be made to serve all reasonable requirements for keeping records and at the same time place the responsibility for unlawful purchase on the buyer or person who presents the order, rather than putting all of the burden of proof on the seller.

The second, and in many ways the more important of the objections to previously proposed measures can be effectually overcome by making such a law clearly applicable and restricting it to the interstate traffic in habit forming drugs leaving to the States themselves the regulation of sales to physicians, dentists and veterinarians other than those desirous of buying in larger quantities or from dealers outside of their State.

A bill taking cognizance of these evidently reasonable objections could readily be prepared and, if introduced in Congress, would not be objected to by any of the many law abiding physicians, dentists, veterinarians or pharmacists who are willing to confine themselves to the practice of their professions in accordance with the provisions of local laws to which they are subject. A law restricting interstate traffic in habit forming drugs, to sales by licensed dealers to other licensed dealers could be made to provide for a complete record of all purchases and sales, with a minimum of expense and trouble to all concerned while a law that does not effectually provide for the recording of all interstate transfers would fail to give the information necessary to enforce otherwise efficient State and local laws that are now on the Statute books.

Reports of A. Ph. A. Committees

REPORT OF COMMITTEE ON UNOFFICIAL STANDARDS.

The following portion of the report of the Committee on Unofficial Standards relates to certain crude drugs and chemicals suggested for inclusion in the next revision of the National Formulary, and by order of the Council is published in the JOURNAL in order to afford opportunity for discussion before the standards proposed are finally adopted.

Manufacturers, importers, analysts, and others interested in any of the proposed standards, are requested to send their criticisms and comments to the chairman of the committee, Geo. M. Beringer, 501 Federal St., Camden, N. J.

APPROVED MONOGRAPHS SUBMITTED AS STANDARDS FOR UNOFFICIAL DRUGS AND CHEMICAL PRODUCTS.

(Continued from page 375)

QUEBRACHO.

1. The dried bark of *Aspidosperma Quebracho-blanco* Schlechtendal (Fam. Apocynaceae).

2. Occurring in nearly flat pieces often reaching 3 cm. in thickness, the outer surface deeply fissured and yellowish-gray or brownish-gray, the inner distinctly striated and yellowish-white; fracture showing two sharply defined strata of about equal thickness, with numerous whitish dots and tangential striations occurring in both; outer stratum reddish-brown and with a rather coarsely granular fracture, the inner yellowish-white and of a short splintery fracture; odor none, taste very bitter and slightly aromatic.

3. Upon incineration, it should yield not more than 10 percent of ash.

4. If .2 gm. of the inner part of the bark be moistened with 1 cc. of alcohol then boiled with 15 cc. distilled water and filtered, the liquid should become greenish yellow on the addition of 3 drops of ferric chloride T. S., but not dark brown (Quebracho Colorado).

QUINIDINAE.

Quinidine.

1. An alkaloid obtained from the bark of various species of *Cinchona* (Fam.

Rubiaceae) and isomeric with quinine [$C_{20}H_{26}O_2N_2=324.21$]. Quinidine should be kept in well stoppered amber colored bottles.

2. Bitter, white crystals or amorphous powder according to the method of manufacture. When crystallized from alcohol it forms monoclinic prisms containing one molecule of alcohol which is partly lost on exposure to air and entirely at 100° C. When precipitated by ammonia water from an aqueous solution of a salt, an amorphous precipitate is obtained which when washed and dried forms an anhydrous powder.

3. Quinidine melts at about 168° C. and on ignition leaves no residue.

4. Quinidine crystallized from alcoholic solution is soluble at 25° C. in 26 parts of alcohol, 46 parts of ether, 2.5 parts of chloroform, very slightly in petroleum benzine and almost insoluble in water.

5. Its alcoholic solution is dextrogyrate and its aqueous solution is alkaline to litmus paper.

6. A solution of quinidine in water (1:1000) acidulated with sulphuric acid shows a strong blue fluorescence.

8. If to 10 cc. of a solution of quinidine in water (1:1000) containing sufficient sulphuric acid to produce complete solution,

a few drops of bromine T. S. be added and then ammonia water in slight excess the liquid acquires an emerald-green color.

9. A solution of about 0.1 gm. of quinidine in 5 cc. of cold sulphuric acid should not be darker than pale yellow.

10. If 0.5 gm. of quinidine be dissolved in 10 cc. of water at 60° C. with just enough sulphuric acid to form a solution neutral to litmus paper and a neutral solution of 0.5 gm. of potassium iodide in 5 cc. of water at 60° C. be added, the mixture slightly agitated, cooled to 15° C. and set aside for one hour with occasional stirring a white precipitate is formed (difference from quinine). If then the precipitate be filtered off, the addition of 2 drops of ammonia water to the filtrate should cause not more than a slight turbidity, but no precipitate (absence of other cinchona bases). Care must be taken to have the liquid after the addition of the potassium iodide solution perfectly neutral; if slightly acid, very dilute ammonia water is to be added drop by drop with constant stirring until neutral to litmus paper.

QUININE GLYCEROPHOSPHATE.

(Quinine Glycerinophosphate.)

1. A glycerophosphate of the alkaloid quinine $[(C_{20}H_{21}O_2N)_2PO_4H_2(C_3H_7O_2) + 4H_2O = 892.56]$. It should be kept in well-stoppered amber colored bottles.

2. Fine white crystalline needles or powder, odorless and having a very bitter taste.

3. Soluble in 850 parts of water, 60 parts of alcohol, very soluble in boiling alcohol, very slightly soluble in chloroform or ether, soluble in 20 parts of a mixture of alcohol 1 volume, chloroform 2 volumes.

4. Quinine glycerophosphate slowly loses part of its water of crystallization at room temperature and becomes anhydrous at 100° C. and melts at 146-147° C. Upon incinerating 0.2 gm. of the salt it should leave no weighable residue.

5. This salt yields a clear solution with diluted sulphuric acid. The aqueous solution is not fluorescent, but becomes so upon the addition of a few drops of diluted sulphuric acid.

6. If to 10 cc. of a saturated aqueous solution of the salt there be added a few drops of bromine T. S. and then 1 cc. of ammonia water, the liquid should acquire

an emerald-green color (Thalleioquin reaction).

7. It must comply with the test given under Quinine Sulphate in the U. S. P. VIII for the absence of excessive amounts of other cinchona alkaloids.

8. A saturated aqueous solution of the salt, acidulated with acetic acid, should not produce a precipitate on the addition of ammonium oxalate T. S. (calcium salts).

9. A saturated aqueous solution should not become more than faintly turbid upon the addition of a few drops of barium chloride T. S. (limit of sulphates).

10. A saturated aqueous solution, acidulated with nitric acid, should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides).

11. If to a saturated aqueous solution, a slight excess of ammonia water be added, and the precipitate be filtered off, the clear filtrate should not show more than a slight turbidity with magnesia mixture T. S. (limit of phosphates).

QUININAE HYPOPHOSPHIS.

Quinine Hypophosphite.

1. The hypophosphite of the alkaloid quinine $[C_{20}H_{21}O_2N_2HPH_2O_2 + 2H_2O = 426.27]$. It should be kept in well-stoppered amber colored bottles.

2. Fine, white silky glistening needles or prisms, odorless and having a very bitter taste.

3. Soluble in 35 parts of water, in 10 parts of alcohol, in 40 parts of chloroform and almost insoluble in ether.

4. Heated to 100° C. it becomes anhydrous. It melts at about 181° C. and upon incinerating 0.2 gm. it should leave no weighable residue.

5. If to an aqueous solution, acidulated with a few drops of nitric acid, there be added silver nitrate T. S. a brown precipitate is formed which by standing becomes black.

6. It must comply with the test given under Quinine Sulphate in the U. S. P. VIII for the absence of excessive amounts of other cinchona alkaloids.

7. A saturated neutral aqueous solution should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides and phosphates).

8. A saturated aqueous solution should

not be rendered more than faintly turbid on the addition of barium chloride T. S. (limit of sulphates).

QUININAE TANNAS.

Quinine Tannate.

1. Quinine Tannate is the tannate of the alkaloid quinine, containing from 30 to 35 percent of quinine.

2. Quinine Tannate may be prepared as follows: Ten gm. of quinine sulphate are dissolved in a mixture of 15 cc. of diluted sulphuric acid and 150 cc. of water. Twelve gm. of tannic acid are dissolved in 75 cc. of water and the filtered solution poured slowly and with constant stirring into the solution of quinine sulphate. Three gm. of tannic acid are then dissolved in 50 cc. of water and 3 gm. of sodium bicarbonate dissolved in 50 cc. of water. These solutions are filtered, the filtrate mixed, and the mixture poured slowly and with constant stirring into the quinine-tannin mixture prepared as above described. The precipitated quinine tannate is allowed to stand for 24 hours. It is then poured onto a muslin filter, washed with 100 cc. of water and expressed with moderate pressure. The expressed mass is then transferred to a porcelain dish, 50 cc. of water added and the mixture heated on the water bath until the quinine tannate melts to a resin-like mass. The supernatant liquid is poured off, the mass cooled, dried in the air and pulverized.

3. Quinine tannate is an amorphous, pale lemon-yellow to yellowish-white, odorless powder, very slightly soluble in water, ether and chloroform, but somewhat soluble in alcohol. Its aqueous and alcoholic solutions are colored bluish-black by ferric chloride test solution. On heating it is decomposed and melts to a purplish resin-like substance.

4. If 1 gm. of quinine tannate be shaken with a mixture of 50 cc. of water and 1 cc. of nitric acid and the mixture filtered a portion of the filtrate should not become more than slightly opalescent after the addition of 1 cc. of silver nitrate T. S., nor should there be any darkening after the addition of 1 cc. of hydrogen sulphide T. S., nor should a portion be rendered turbid immediately by barium chloride T. S.

5. If from 0.5 gm. to 1 gm. of quinine tannate be mixed with 25 cc. of water and an excess of ammonia water, the mixture

extracted with 3 successive portions of 20 cc. each of chloroform, the total solvent washed with water and then evaporated, the weight of residue obtained after drying at 100° C. (212° F.) should correspond to from 30 to 35 percent of anhydrous quinine. If this residue be dissolved in 20 cc. of water by the aid of a few drops of diluted hydrochloric acid and 1 cc. of the solution be mixed with 20 cc. of water and 2 or 3 drops of bromine T. S., the mixture should assume a green coloration on the addition of ammonia water.

6. If 0.2 gm. of quinine tannate be ignited no weighable residue should be obtained.

7. If quinine tannate be dried at 100° C. (212° F.) to constant weight the loss should not correspond to more than 10 percent of the weight of substance taken.

8. If 2 gm. of quinine tannate be shaken with 3 successive portions of 25 cc. each of anhydrous ether, the solvent poured through a filter, the filter washed with 10 cc. of the solvent, the several filtrates united, evaporated and the residue dried to constant weight at 100° C. (212° F.) the weight of the residue should not exceed 0.005 gm. (limit of *uncombined alkaloid*).

SODII GLYCEROPHOSPHAS

Sodium Glycero-phosphate (Sodium Glycero-inophosphate).

1. A semi-solid, colorless or faintly yellowish, transparent mass, having a saline taste, odorless, containing 75 to 80 percent of sodium glycerophosphate ($C_3H_5O_4P.O.Na_2 + 3H_2O = 270.24$) as determined by the method given below.

2. Very soluble in water. Nearly insoluble in alcohol.

3. When strongly heated, the salt yields inflammable vapors and at a red heat is converted into sodium pyrophosphate, which imparts an intense yellow color to a non-luminous flame.

4. The aqueous solution (1 in 20) is slightly alkaline to litmus paper, but should not be reddened by phenolphthalein.

5. On heating about 0.1 gm. of the salt with about 0.5 gm. of potassium bisulphate, pungent vapors of acrolein will be evolved.

6. A mixture of an aqueous solution of the salt (1 in 20) with an equal volume of ammonium molybdate T. S., kept at 20° to 25° C. should remain clear for 5 minutes

(limit of phosphates); if the mixture be heated on a water bath, a yellow precipitate will be formed.

7. If about 1 gm. of the salt be thoroughly triturated in a mortar with 20 cc. of alcohol, the liquid filtered, and mortar and filter washed with 10 cc. of alcohol, the alcoholic solution spontaneously evaporated should yield a residue which after drying in a desiccator, should weigh not more than 1 percent of the weight of the salt taken (limit of glycerin and other organic impurities).

8. The aqueous solution (1 in 20) should not respond to the U. S. P. VIII Time Limit Test for heavy metals.

9. Portions of 10 cc. each of an aqueous solution of the salt (1 in 100), acidulated with acetic acid, should not at once become turbid on addition of ammonium oxalate T. S. (Calcium) nor, when acidulated with nitric acid, at once on the addition of barium chloride T. S. (Sulphates), nor more than slightly opalescent on addition of silver nitrate T. S. (Chlorides).

10. If a solution of 2 to 3 gm. of the salt, accurately weighed, in 50 cc. of distilled water be titrated with normal hydrochloric acid V. S., with methyl orange as indicator, each cc. of the V. S. required corresponds to 0.2702 gm. of sodium glycerophosphate ($C_3H_7O_2PO_3Na + 3H_2O$).

STRYCHNIAE GLYCEROPHOSPHAS.

Strychnine Glycerophosphate. (Strychnine Glycerinophosphate.)

1. The glycerophosphate of the alkaloid strychnine ($C_{21}H_{22}O_2N_2$)₂P O₄H₂(C₃H₇O₂) + 6H₂O=948.56. It should be kept in well-stoppered bottles.

2. White rhombic crystals or powder, odorless and having at first a faint sweet taste afterward intensely bitter.

3. Soluble in 350 parts of water, the solution being neutral or slightly alkaline to litmus paper, in 250 parts of alcohol, slightly soluble in chloroform and very slightly in ether.

4. Upon incinerating 0.2 gm. it should yield no weighable residue.

5. The addition of sulphuric acid to the salt produces no color, but on adding a fragment of potassium dichromate, a deep blue color is obtained, changing to deep violet, then to purplish-red, cherry-red and finally to orange or yellow.

6. If to an aqueous solution, ammonia water be added to slight excess, a white precipitate is formed which is readily soluble in chloroform.

7. A saturated aqueous solution, acidulated with nitric acid, should not be rendered more than faintly turbid on the addition of silver nitrate T. S. (limit of chlorides).

8. A saturated aqueous solution of the salt, acidulated with hydrochloric acid, should not show more than a slight turbidity on the addition of barium chloride T. S. (limit of sulphates.)

9. If to an aqueous solution, a slight excess of ammonia water be added and the mixture filtered, the filtrate should not show more than a slight turbidity with magnesia mixture T. S. (phosphates).

TEREBINTHINA LARICIS.

Larch Turpentine. Venice Turpentine.

1. A viscid oleoresin obtained from *Larix Europea* De. C. (Fam. Pinaceae)

2. A nearly transparent, yellowish or yellowish green, thick liquid, heavier than water, having a terebinthinate odor and a bitter characteristic taste. Completely soluble in alcohol, glacial acetic acid, acetone and chloroform. Almost entirely soluble in petroleum benzine with separation of a light flocculent deposit.

3. The oleoresin may have a slight greenish fluorescence when viewed by reflected light but should exhibit no violet or purple fluorescence (absence of rosin oil).

4. One part by weight of Larch Turpentine should dissolve completely, forming a clear solution, in three parts by weight of 80 percent. alcohol (absence of turpentine or other adulterants).

5. If 5 grams of Larch turpentine be dissolved in 25 cc. of alcohol, a few drops of Phenolphthalein T. S. added and the solution be rendered slightly alkaline by addition of a 10 percent solution of potassium hydroxide, the resulting solution should be clear and transparent and no separation of oily drops should occur (absence of rosin oil). The acid number should not be over 80.

TERRA SILICEA PURIFICATA.

Purified Siliceous Earth. Purified Kieselguhr. Purified Infusorial Earth.

1. A form of Silica (SiO₂) consisting of the frustules and fragments of diatoms, purified by boiling with diluted hydrochloric

acid, washing and calcining. It should be kept in tightly closed containers in a dry place.

2. Purified Siliceous Earth is an odorless, white, or not more than a light gray or light buff colored, very light and very fine powder passing through a number 120 sieve. It readily absorbs moisture and will retain four times its weight of water without the mixture becoming fluid.

3. It is insoluble in water, acids or dilute alkaline solutions.

4. Upon heating it should not lose more than 10 percent of its weight (absence of excessive moisture).

5. If boiled with distilled water and filtered the filtrate should be colorless and neutral to litmus paper.

6. If 1 gm. of purified siliceous earth be added to 25 cc. of diluted hydrochloric acid no effervescence should occur (absence of carbonates), and after boiling and filtering the filtrate should be colorless and portions tested should give no precipitate with barium chloride T. S. (absence of sulphates), and not more than a faint blue reaction with potassium ferrocyanide T. S. (limit of iron). Upon evaporating 10 cc. of this acid filtrate to dryness on a water-bath not more than 0.001 gm. of residue should remain (limit of soluble impurities).

THEA.

Tea.

1. The dried leaves and leaf buds of *Thea sinensis* Linne and other species of *Thea* (Fam. *Ternstroemiaceae*) prepared by the usual trade processes of fermenting, drying and firing. Sometimes slightly flavored by addition of the leaves of the sweet olive, rose, jasmin or orange flowers.

2. In small cylindrical rolls or balls of a greenish or blackish color. When softened in water and unfolded the leaves are from 20 to 75 mm. long, elliptical, oblong or lanceolate, acute or emarginate at the apex and sharply but irregularly serrated. The midrib is prominent; the upper surface of the leaf glabrous and the under surface sometimes hairy.

3. Tea has an agreeable aromatic odor, varying according to variety and a pleasant bitter and astringent taste. On ignition tea should leave not less than 4 percent nor more than 7 percent of ash, of which one-half should be soluble in distilled water.

4. If one gramme of tea be shaken with 20 cc. of distilled water and the liquid separated by filtration, the filtrate should give not more than the faintest turbidity when treated with silver nitrate T. S. (limit of chloride).

5. If a small portion of the tea be treated with warm distilled water and the leaves removed by straining, no colored nor heavy sediment should be observed in the strained liquid on standing, (absence of colored and mineral facings.)

6. If one gramme of tea be dried at 100° C. until it ceases to lose weight, the dried residue should weigh not less than 0.9 gm. (limit of moisture).

7. If one gramme of tea be boiled with 100 cc. distilled water, the solution strained and the strained liquid be treated with excess of lead oxide and filtered, the filtrate should show no greenish color or precipitate on addition of Ferric Chloride T. S. (absence of added tannin).

8. For pharmaceutical purposes a good grade of "black" tea, assaying, when tested according to the following process, not less than 2.5 percent of caffeine should be employed.

Assay of Tea.

Tea 6 gm.
Lead Acetate,
Sodium Phosphate,
Chloroform,
Ether,
Distilled Water, each a sufficient quantity.

Introduce the tea into a flask provided with a reflux condenser and pour upon it 600 cc. of distilled water. Attach the condenser and boil for eight hours continuously. At the expiration of this time add to the hot liquid 4 grammes lead acetate and continue the boiling for ten minutes longer. Remove from the source of heat and allow to settle. Filter off 500 cc. of the liquid (equivalent to 5 grammes of tea) and evaporate to 50 cc. Transfer to a flask or beaker and remove the lead acetate by adding a slight excess of sodium phosphate. Filter the liquid, washing the precipitate thoroughly, and again evaporate the filtrate to 50 cc. Transfer to a separating funnel and wash out the caffeine with four successive portions of 20, 15, 10 and 10 cc. of chloroform. Draw off the chloroform solution into a tared flask and distill off the chloroform from the combined liquids. When the residue is dry add

2 cc. ether and evaporate on a water-bath carefully to avoid decrepitation. Continue the heating until the weight remains constant after cooling. The weight of the residue multiplied by 20 will give the percentage of caffeine contained in the tea.

TONKA.

Tonka Beans.

1. The prepared ripe seeds of various species of *Coumarouna* (*Dipteryx*). (*Fam. Leguminosac*).

2. Black, or grayish from an efflorescence of coumarin, the testa oily and wrinkled; from 25 to 50 mm. long, 10 to 25 mm. broad, and 7 to 15 mm. thick; oblong, with one edge thin and one end slightly pointed; ex-albuminous, the embryo of two brownish, fleshy cotyledons and a pinnatifid plumule; cotyledons usually enclosing a thin cavity which frequently contains crystals of coumarin. Odor strong, vanilla like. Taste aromatic and strong of coumarin.

Upon incineration tonka leaves not more than 4 percent of ash.

VINUM PORTENSE.

Port Wine.

1. An alcoholic liquid made by fermenting the juice of fresh grapes, the fruit of *Vitis vinifera* Linné (*Fam. Vitaceae*), in the presence of their skins, and fortifying with alcohol or brandy.

2. The term "Port Wine" was originally limited to that variety produced in Portugal. Now, however, the term "Port Wine" means any natural wine having the color and peculiar flavor generally associated with this wine. For medicinal and pharmaceutical purposes, native wines* may be used as Port Wine, provided that they correspond to the description and tests given below.

3. Port wine should be preserved in well-closed casks, filled as full as possible, or in well-stoppered bottles, in a cool place.

4. A reddish liquid having a pleasant odor

free from yeastiness, and a fruity, moderately astringent, pleasant, and slightly acidulous taste, containing not less than 18, nor more than 22 percent of absolute alcohol by volume.

5. The specific gravity at 25° C. should be not less than 1.000 nor more than 1.025.

6. If 100 cc. of Port Wine be evaporated, the residues, when dried during 12 hours on the water-bath, should amount to not less than 8 nor more than 13 gm.; this residue, ignited at a low temperature and burned gradually to whiteness, moistened with a small portion of ammonium carbonate T. S., and again carefully ignited, should weigh not less than 0.2 nor more than 0.4 gm.

7. To neutralize 50 cc. of Port Wine should require not less than 2.5 cc. nor more than 4 cc. of Normal Potassium Hydroxide V. S. (limit of *free acid*), litmus T. S. being used as indicator.

8. If 10 cc. of Port Wine be diluted with an equal volume of water, and treated with 5 drops of ferric chloride T. S., the liquid should acquire a brownish green color (presence of *tannic acid*).

9. If 75 cc. of Port Wine be acidified with 5 cc. of diluted sulphuric acid (1 to 3), and thoroughly shaken in a separator with a mixture of equal parts of petroleum benzin and ether, and if the solvent, after separation, be transferred to a porcelain dish, allowed to evaporate spontaneously and the residue dissolved in 3 cc. of water, the solution should not have a sweet taste (absence of saccharin), nor should it give a violet color upon the addition of a diluted solution of ferric chloride (1 to 200) (absence of salicylic acid).

10. If 50 cc. of Port Wine be treated with a slight excess of ammonia water, the liquid should acquire a green or brownish-green color, if it be then well shaken with 25 cc. of ether, the greater portion of the ethereal layer removed, and evaporated in a porcelain dish with an excess of acetic acid and a few fibres of uncolored silk, the latter should not acquire a crimson or violet color (absence of red aniline colors).

*Food Inspection Decision No. 122 requires that such wines be labeled with the name of the state in which they are produced.

Report on the Progress of Pharmacy

For the Year 1912

(Tenth Installment.)

1. *Medicinal Plants. Comparative Activity.*—Dr. James Burmann has conducted a line of experiments since 1907, assaying each year fresh plants of aconite, belladonna, colchicum, *Digitalis ambigua* and *Digitalis purpurea*. The plants were wild grown; the aconite being collected in Canton Vaud; the belladonna around Aigle, the colchicum also around Aigle; the *Digitalis ambigua* in Canton Valais and *Digitalis purpurea* in Alsace. All were collected at flowering except colchicum, which was gathered at seeding time (June-July). The assays were by the gravimetric method of Keller; the digitalis species being assayed for digitoxin. The results are tabulated below:

<i>Aconite</i> (Percentage of aconitine).	
1907—0.104%	1909—0.042%
1908—0.100%	1910—0.054%
1911—0.094%	

<i>Belladonna</i> (Percentage of Atropine).	
1907—0.094%	1909—0.045%
1908—0.082%	1910—0.046%
1911—0.099%	

<i>Colchicum</i> (Percentage of colchicine).	
1907—0.190%	1909—0.114%
1908—0.160%	1910—0.148%
1911—0.200%	

<i>Digitalis ambigua</i> (Percentage of Digitoxin).	
1907—0.134%	1909—0.067%
1908—0.120%	1910—0.069%
1911—0.148%	

<i>Digitalis purpurea</i> (Percentage of digitoxin).	
1907—0.078%	1909—0.033%
1908—0.063%	1910—0.037%
1911—0.070%	

Schweiz. Wschr. f. Chem. u. Pharm., L. (1912) No. 1, 2, H. V. A.

2. *Antidiphtheric Sera: Commercial Variation.*—De Gottrau calls attention to a prescription received from an oculist of Lausanne calling for Roux's Antidiphtheric Serum 10 cc. diluted with physiologic salt solution 100 cc.; the mixture being used for infectious diseases of the eye. His article is to call attention to the fact that the sera pre-

pared in Switzerland (Institute of Bern) are not identical in strength with the Roux sera and he gives the proportion of Swiss sera he used—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912) No. 1, H. V. A.

3. *Plants of Dioscorides: Comparison with Modern Specimens.*—E. Emmanuel, after describing the various manuscripts of Dioscorides, the earliest printed editions of the works of the founder of materia medica and the most comprehensive modern translations, mentions the "Codex Constantinopolitanus" of A. D. 512 as the oldest and in some respects the finest of the manuscripts, particularly since it is richly illustrated. An exact replica of this manuscript was published in 1906, in an edition de luxe and the illustrations found therein have been carefully compared with the herbarium of oriental plants owned by M. Boissier of Chambes, Switzerland. His reports on the botanical origin of the 381 plants pictured in this oldest manuscript of Dioscorides is given in the article in tabulated form along with the previous conclusions of Tschirch as published in the latter's Handbuch der Pharmakognosy.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), Nos. 4 and 5, 45 and 64, H. V. A.

4. *Ants: Medicinal Use.*—Fr. Berger presents an interesting sketch of the history of ants in medicine from ancient times until today, particular reference being made to the present use of ants in "old wives medicine" in primitive districts. The article is accompanied by excellent bibliographical references.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912) Nos. 4 and 5, 51 and 72, H. V. A.

5. *A False Ipecac from Colombia: Pharmacognostic and Macroscopic Description.*—C. Hartwich reports a new so-called ipecac which contains no alkaloid; hence is useless. It is 0.8 to 1.0 cm. thick, black-brown externally, with yellowish wood. The bark is

thinner than in the true ipecac and is devoid of the characteristic annulae of the official variety while the wood is correspondingly thicker (0.5 cm.) Much of the bark is broken off (likely due to unequal drying) leaving characteristic fissures and in some cases bare wood.

Anatomically, the bark shows first, a thin layer of dark brown cork with flat cells without very thick walls; second, a small phelloderm 1 to 4 cells thick, with thin-walled parenchyma containing amorphous inulin or similar carbohydrate, and also "rosettes" of calcium oxalate; third, inner layer of bark, radially striped sieve tubes, which on longitudinal section show oblique and calloused sieve-plates. These sieve tubes are found only in the inner layer but a short distance from the cambial layer. There are no sclerenchyma in the bark but occasional lignified cells as shown by reference to phloroglucin—HCl reagent.

The wood layer is radial with medullary rays 1 to 2 cells broad and as much as 40 cells long, the cells being lignified, pitted and containing inulin as the only carbohydrate and also calcium oxalate, both in large single crystals and in rosettes.

The wood wedges contain first, normal wood vessels, some as much as 81 microns in diameter and some filled with fungoid growth; second, wood vessels with branched ends; third, occasional tracheids; 4th, some parenchyma containing calcium oxalate "drusen"; fifth and chiefly, much thickened libriform fibres which reagents show are not lignified.

The author has not been able to exactly identify this new false ipecac, but comparison of it with the other so-called ipecacs leads him to the opinion that it comes from a plant of the Malpighiaceae and that it closely resembles an illustration which Guibourt in his "Histoire Naturelle des Drogues Simples" (1876) called "Ipecacuanha gris-blanc de Merat." The article closes with a classification of all the known ipecacs including the one just described.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912) No. 7, 93. H. V. A.

29. *Amount of Nicotine in the Tobacco Plant.*—Chuard and Mellet report an investigation of the nicotine content of tobacco from the sprout in early spring to the defoliated plant in the fall. The results were as follows, the nicotine being expressed in

parts per thousand: 1. Sprouts three weeks old, traces of nicotine in entire sprout. 2. Young plants 7 weeks old (after "repiquage") leaves 0.324; roots 0.234. 3. Plants 10 weeks old (before topping), leaves 0.447; stems 0.081; roots 1.085. 4. The cut apex from plant 10 weeks old, 0.687. 5. The topped plant 13 weeks old (at beginning of development of "repousse axillaires") leaves 4.989; stems 0.933; root 2.890; small "repousses" 1.490; large "repousses" 1.970. 6. Plants 19 weeks old (just at withering of leaves), leaves 9.202; stems 0.868; roots 2.669; "repousses" 1.568. 7. Withered stalk (after decay of leaves), stems 0.972; roots 1.987; "repousses" 1.283. The above figures refer to the fresh plant and the paper gives another table showing percentage of nicotine in each of the above samples when dried.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912) No. 31, 470. H. V. A.

30. *Structure of Panama Hat Fibers.*—The fibers are from the leaves of *Carludovica palmata* and is found on the banks of the Rio Yapacani in Bolivia. Hartwich reports microscopical structure of these fibers illustrating article with four figures.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912) No. 32, 481. H. V. A.

31. *An Exact Centrifuge Sediment Measure.*—Dr. C. Strzykowski describes a new sediment tube made by F. Hegershoff of Leipzig which is calibrated to 1/100 of a cubic centimeter and has metallic cap at base to render it stronger.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912) No. 33, 497. H. V. A.

Yttrium: The Quantitative Determination of.—C. F. Whittemore and C. James found that Yttrium could be quantitatively separated from sodium by means of ammonium sebacate, the average yield being 0.1578 gm. Y_2O_3 found in place of 0.1575 gm. calculated. It was found that in the presence of potassium, a double precipitation with ammonium sebacate was necessary to effect complete separation of the Yttrium from the potassium.

Oxalic acid in the presence of ammonium chloride effects a perfectly satisfactory separation from iron, aluminum, lithium, and magnesium, the precipitation being carried out in the cold.—J. Am. Chem. Soc., June, 1912, Vol. 34, p. 772. (L. A. B.)

Tellurium: Sulphide of.—In a careful quantitative study of the compound formed

when H_2S is allowed to act on solutions of H_2TeO_3 , W. O. Snelling states that the precipitate formed consists of tellurium and sulphur of one atom of tellurium to two atoms of sulphur, and that the entire quantity of sulphur can be extracted from the precipitate by means of CS_2 , if the solution has been allowed to stand for some time or has been warmed.

Tellurium sulphide (TeS) appears to be formed, but is decomposed at 0°C . in about four hours or instantly if heated, as is shown by the fact that only half the sulphur may be extracted by CS_2 at the moment of precipitation, and at a temperature of 0°C .

The author concludes "that a sulphide of tellurium having the formula of TeS exists; that it is formed by passing hydrogen sulphide gas into a solution of tellurous acid, according to the reaction $2\text{H}_2\text{S} + \text{H}_2\text{TeO}_3 = \text{TeS} + \text{S} + 3\text{H}_2\text{O}$, and that this compound decomposes at any temperature higher than 0° or in about four hours at that temperature."—*J. Am. Chem. Soc.*, June 1912, Vol. 34, p. 802. L. A. B.

Perchlorates: A Quantitative Determination of.—A. B. Lamb and J. W. Marden (N. Y. Univ.) state that perchlorates may be rapidly and accurately determined by heating the perchlorate in a glass test tube (Jena) fitted with two plugs of asbestos wool, each 15 mm. thick and placed about 45 mm. apart. The tube is clamped in a nearly horizontal position and the sample heated gently at first until the effervescence, due to the escape of oxygen, ceases, after which the chloride is thoroughly fused. The asbestos plugs prevent the loss of chloride by volatilization.

After cooling, the contents of the tube is transferred to a filter and thoroughly washed with warm water, the chloride being determined in the filtrate as silver chloride. The method gave results varying less than 0.02 percent from the calculated values.—*J. Am. Chem. Soc.*, June 1912, Vol. 34, p. 812. L. A. B.

Southern Cypress: Oil of the.—Allen, F. Odell gives as the analysis of the oil from the cones of the southern cypress, (*Taxodium distichum*, Rich.) the following values:

Dextro pinene 85 percent, dextro limonene 5 per cent, a pseudo terpene alcohol (Sabinol?) 2 percent, carvone 3 percent, a tricyclic sesquiterpene 3 percent, the remainder composed of substances boiling above 275°C . No aldehydes were found in the oil.—*J. Am.*

Chem. Soc., June 1912, Vol. 34, p. 824. L. A. B.

Jamaica Camphor: Determination in Leaves, Twigs and Wood.—H. W. Emerson and E. R. Weidlein of the University of Kansas, state as the result of a determination of the Camphor in the leaves, twigs and wood of camphor trees grown in Jamaica, that it is possible to grow camphor to advantage in Jamaica. The leaves were found to be richer in camphor than the twigs or the wood, and they state that very little camphor is lost by the ordinary weather drying of the leaves. The green leaves were found to average 1.32 percent pure camphor; dried leaves=1.569 percent; green twigs=0.58 percent; dried twigs=0.5415 percent; wood=0.61 percent.—*Jour. Ind. and Eng. Chem.*, Jan. 1912, Vol. 4, p. 33. L. A. B.

Carbon Dioxide: Volumetric Determination.—Leon T. Bowser describes a form of apparatus for a volumetric determination of CO_2 . The CO_2 is generated from the sample in a small flask, by means of acid, and distilled over into a strong alkaline solution contained in an absorption tower, containing glass beads. The CO_2 is absorbed in the alkaline solution in the tower and is afterwards titrated by means of standard acid, phenol (phthalein and methyl orange being used as the indicators, and hydroxide being neutralized and the carbonate converted into bicarbonate with phenolphthalein as indicator, the titration is then finished with methyl orange. The advantage of the method lies in the form of apparatus used.—*Jour. Ind. and Eng. Chem.*, March 1912, Vol. 4, p. 203. L. A. B.

Hydrogen Peroxide: History, etc.—Professor C. B. Jordan tells an interesting story of Hydrogen Peroxide, accompanying his paper with charts showing the effect of varying conditions upon the permanency of its solutions and particularly calling attention to the fact that bottles stoppered with cotton seem to conserve the strength of this preparation better than cork-stoppered bottles. The charts demonstrate the necessity of keeping solutions of H_2O_2 from exposure to light. He calls attention to an excess of acid in many commercial samples. *Proc. Ind. Pharm. Assoc.*, 1912, 58-65. E. C. M.

Spiritus Aetheris Nitrosi.—This preparation should never be kept in bulk, but should be immediately placed in one or two small bottles

tainers, tightly-stoppered and sealed with paraffin or wax, and these kept in a cool, dark repository. The paper is accompanied by a table showing the desirability of the latter method in the preservation of this preparation over the way usually practiced.—C. B. Jordan, *Proc. Ind. Phar. Assoc.* 1912, 53-54. E. C. M.

Progress in Methods of Physiological Testing.—Prof. C. R. Eckler says that the activity of many drugs cannot be determined by chemical analysis, either because "their chemistry is improperly understood or is of such a nature as not to admit of qualitative methods," and he describes the methods, both qualitative and quantitative, of testing some of such drugs physiologically. He instances digitalis, ergot and Indian Cannabis as being among such drugs as cannot be assayed by chemical means, and describes the methods by which their physiological activity may be determined. For the digitalis series of drugs, including with that drug, strophanthus, convallaria, squill and apocynum, four methods of examination are used in this country: the guinea-pig, cat, twelve-hour frog, and one-hour frog heart method. Ergot is tested by the uterus-test, blood-pressure method on dogs, and the cock's-comb test. Indian Cannabis is tested by comparison of the effects, on several pairs of dogs, of a standardized drug and the drug which is under examination. The dose of the drug to be standardized which produced a certain effect, is compared with that of the standard preparation which was required to produce the same effect, and by comparison of results on several animals conclusions are drawn. He says that the state of affairs concerning physiological methods and standards is somewhat similar to that which existed a number of years ago regarding chemical methods and standards, when every chemist chose his own methods and no uniform system of analysis had been developed. He looks forward to a gradual development of physiological standardization along definite and certain lines, and hopes for the official adoption of physiological methods and standards covering all the important drugs and preparations that cannot be assayed by chemical means.—*Proc. Ind. Phar. Assoc.* 1912, 65-70. E. C. M.

Asafoetida Tablets: Assay of.—L. Henry Bernegan and George E. E'Ve recommend the following process for assay of asafoetida tablets: A number of tablets corresponding

to about ten grains of asafoetida are powdered and extracted twice with chloroform. The residue, insoluble in chloroform, is moistened with 5 percent hydrochloric acid, some sand is added, and the mixture is evaporated to dryness on a steam-bath. The residue is then extracted three or four times with hot chloroform, the chloroform extracts added to the first two extractions and the united chloroformic extracts evaporated to dryness on a water-bath in a tared flask. The resultant weight multiplied by two, represents about 98 percent of the equivalent of U. S. P. asafoetida in the tablets taken.—*Proc. Penn. Phar. Assoc.* 1912, p. 305. E. C. M.

Gelatin, Impurities in.—J. G. Roberts remarks that a quite frequent source of impurity in gelatin is the presence of sulphites, which are probably present as the result of the use of sulphur dioxide as a bleaching agent, although it has been claimed by some manufacturers that its presence is necessary as a preservative during the process of manufacture. While sulphites have been found in the majority of samples examined, it is usually there in very small quantities, sometimes only a trace. The term "technical" which is found on many packages is probably placed there because of this impurity. His examination for arsenic developed the fact that in some samples of German manufacture it was detected and therefore he thinks it advisable to test supplies of Gelatin from this source.—*Proc. Penn. Phar. Assoc.*, 1912, pp. 310-312. E. C. M.

Glycerin Determination in Tooth Paste, etc.—Charles E. Vanderkleed and Fritz Heidlberg recommend the following method for the determination of glycerin in tooth-paste:

An amount of the mixture containing about 2 grammes of glycerin was shaken in a centrifuge bottle with 30 cc. of a mixture of 2 parts of absolute alcohol and one part of absolute ether. After all the glycerin had dissolved in this mixture the bottle was centrifuged and the clear solution, containing glycerin, and phenol, soap and essential oils together with traces of chlorides was filtered through paper into a beaker. The extraction with the alcohol-ether mixture was repeated twice and the united solutions and washings were evaporated at a low temperature to a small volume. 20 cc. of water were added to it and the digestion continued on the water-

bath. When the volume had reached about 10 cc. the contents were transferred to a separator, the beaker rinsed repeatedly with water and the glycerin solution, after acidifying with dilute H_2SO_4 , was shaken with about 20 cc. of ether, in this way separating the glycerin from the phenol, soap, and oils. The watery solution was drawn off, the ether washed twice, and the solution and washings evaporated and treated in the same way as the glycerin solution of the process for the determination of glycerin in suppositories before quoted.—Proc. Penn. Phar. Assoc., 1912, p. 308. E. C. M.

Glycerin in suppositories: Determination of—Charles E. Vanderkleed and Fritz Heidlberg recommend the following method, based upon Hehner's bichromate method for the determination of glycerin in suppositories: About half of the suppository (about 2 gm.) is dissolved in a separator with hot water acidified with sulphuric acid and shaken out with ether whereby a separation from the stearic acid is effected. The watery solution is evaporated on a steam-bath to a small volume, 10 cc. water are added and again evaporated to a small volume, thereby effecting a complete separation of the ether. The solution is rinsed into a 250 cc. volumetric flask, cooled, and filled to the mark with water. (In case a preliminary test showed the presence of chloride, it is better, after evaporation, to add a little freshly precipitated silver carbonate, from 0.1 gm. of silver sulphate. Let stand for ten minutes and fill up to the mark.)

Twenty-five cc. of the filtered solution are measured from a pipette into a 250 cc. volumetric flask, 25 cc. of potassium bichromate solution are added, and lastly 25 cc. of strong sulphuric acid are added slowly under constant rotating to avoid ebullition. The flask is then transferred to a boiling water-bath for 20 minutes, cooled, and filled to the mark. In 25 cc. of this solution the excess of bichromate is determined by adding 20 cc. of potassium iodid T. S. and titrating against approximately N/10 $Na_2S_2O_4$, the factor of which toward the potassium bichromate solution has been determined previously. Calculate the amount of potassium bichromate which has been used to oxidize the glycerin to carbon dioxide. One cc. of potassium bichromate is equivalent to 0.01 gm. of glycerin.

The potassium bichromate solution is prepared by dissolving 71.615 gm. of crystallized potassium bichromate in water, adding 150 cc. sulphuric acid, and diluting with water to 1000 cc. at 20° C.

In order to determine the factor of the sodium thiosulphate toward the potassium bichromate solution it is advantageous to dilute 10 cc. of the latter to 100 cc. and to use 10 cc. of this dilution for the titration.—Proc. Penn. Phar. Assoc., 1912, pp. 307-308. E. C. M.

Arsenic: Antidote for—Mr. Otto Raubenheimer suggests that Magma Magnesia N. F. is much better for preparation of arsenical antidote than is the magnesium oxide of the present official formula. He recommends that 300 cc. of milk of magnesia be diluted with 300 cc. of water and this mixture placed in a bottle holding about 1 liter; 40 cc. Liquor Ferri Tersulphatis diluted with 260 cc. of water to be placed in another bottle. When the antidote is required add the iron solution gradually to the magnesia mixture, shake well and the preparation is ready for instant administration. He claims for the preparation the following advantages:

1. The finely suspended magnesium hydroxide in the milk of magnesia forms a smooth and finely divided magma of ferric hydroxide.
2. Such a magma unquestionably has therapeutic advantages in combining more readily with the arsenic.
3. By pouring the iron solution into the diluted milk of magnesia a more voluminous magma will be obtained than by the reverse as directed in the U. S. P.
4. Milk of Magnesia, if properly prepared, is practically free from carbonate, while magnesium oxid always contains some carbonate, except when recently calcined.

In conclusion, he begs pharmacists to keep these two solutions on hand, side by side, ready for immediate use.—Proc. N. Y. Phar. Assoc., 1912, pp. 321-324. E. C. M.

Fluoride Salts: Antidote for—Professor E. H. LaPierre calls attention to the dangers pertaining to the use of Fluorid of Sodium in Roach and Ant Destroyers and to the improper selection of Lime Water as an antidote for cases of poisoning from fluorid salts, and suggests in place of Lime Water to use Milk of Lime.—Proc. Mass. Phar. Assoc., 1912, p. 38. E. C. M.

Klip Buchu: Occurrence in our commerce as an adulterant of Buchu, U. S. P.—Klip Buchu leaves, *Aidenandra fragrans*, has been found in quantities of 17 percent in the long buchu of our market, by Prof. William Mansfield, of Columbia University. Klip Buchu grows in the same region as the official buchu and therefore is gathered by the laborers who are employed to gather that drug. It is in such cases as these that the pharmacognosist plays his part. In fact, it is just beginning to be recognized by dealers in drugs that a pharmacognostic examination of drugs of a vegetable origin, whether in the whole or in the powdered form, is absolutely necessary to determine the botanical origin, to guard against the mistakes of collectors and accidental or intentional adulteration.—Proc. N. Y. Phar. Assoc., 1912, pp. 297-303. E. C. M.

Official Preparations: Shall the druggist make or buy them?—Writing upon this subject, Mr. James H. Martin, of Winchester, Ky., divides the preparations for which formulas are given in the pharmacopoeia into thirty-one classes, all of which he asserts can be made to advantage by the druggists, with the exception of Extracts, Fluidextracts, Tinctures of potent drugs and some few of the liquors.—Pros. Kentucky Phar. Assoc., 1912, pp. 119-122. E. C. M.

Sweet Spirit of Nitre.—In order to determine the cause of the trouble connected with the method of manufacture and the storage of this preparation, Dr. Linwood A. Brown made an exhaustive study of this preparation, conducting a series of experiments to determine its permanency as prepared with absolute alcohol and with U. S. P. alcohol, and as kept under varying conditions, and concludes that, from the result of these experiments, it is demonstrated that absolute alcohol should be used in its preparation, and that it should be stored in small containers protected from the light.—Proc. Kentucky Phar. Assoc., 1912, pp. 134-136. E. C. M.

Oil of Peppermint: Influence by Cultivation.—This is article No. 7 by the Committee of the Austrian government for the increased cultivation of medicinal plants, which articles have since been published in book form: "Ueber Kulturversuche mit Arzneipflanzen in Korneuburg," by Prof. Dr. W. Miltacher.

The peppermint herb was cultivated under various conditions, the second highest yields being obtained with fertilizers of manure and saltpeter, and the highest with manure, saltpeter, superphosphate and potash salt, which herb also yielded the highest percentage (0.95) of volatile oil. Dr. Gustav Mossler, of the chemical-pharmaceutical laboratory of the University of Vienna, made a complete analysis of the different oils, which he tabulated and which should be consulted in the original article.—Ph. Post, 1912, No. 1, 2-5. O. R.

Tablets: Their Manufacture by the Pharmacist.—Magister Jos. Hoyer, apotheker in St. Valentin, deplors the fact that the pharmacist is flooded with tablets prepared by factories and suggests a remedy, namely, the manufacture of these tablets by the pharmacist himself. From his own practical experience the author writes a series of articles on the technique of tablet making.—Ph. Post, 1912, No. 2, 4, 6, 10, 12. O. R.

Formulas for Foreign Specialties.—As an answer to numerous queries as to the composition of proprietary preparations, formulas are given for: Aniodol, Antikamnia, Beecham's Pills, Beecham's Glycerin and Cucumber, Pilules savonneuses de Boissy, Boricine Meis-sionier, Bromidi, Bromo Seltzer, Vinaigre de Bully, Cachets Faivre, Calvert's Carbolic Tooth Powder, Cascarine Leprince, Chlorodyne Browne, Coal-tar Saponné Le Boeuf, Colchi-Sal Midy, Creme Girard, Creme Simon, Diadermin, Eau de Bôtot viritable, Eau des Jacobins, Eau dentifrice du Dr. Pierre, Eau précieuse Dépensier, Elixir dentifrice des Bénédictins de Toulac, Elixir Grez, Elixir Nyrdahl, Eupnine Vernade, Foster's Salbe, Gouttes livoniennes Trouette, Grains de Val, Granules des Vosges, Grayon Gyrol, Hazeline-Cream, Histogénol Naline, Listerine, Lotion Deguéant, Vin Coca Mariani, Pilules Orientales, Panguadine, Pesquis Uran-Wein, Pierre des Fakirs, Pink Pills, Poncelet's Hustenpastillen, Potion du Char-treux, Poudre Decock, Purgetyl Détry, Purgul Koehly, Racahout des Arabes Delan-grenier, Scavuline, Sirop Delabarre, Sirop Deschiens, Sirop Famel, Sirop Rami, Solution Pautanberge, Thaolaxine, Thé Chambard, Verne's Boldo-Elixir, Pastilles Valda, Vin de Vial.—Ph. Post, 1912, No. 2, 16, from Zblatt Pharm. O. R.

Pharmacopœa Austriaca VIII—Comments.

—The following comments are submitted by the scientific laboratory of G. Hell & Co.:

Aluminum Aceticum Solutum (Lig. Alumin. Subacet.) A comparison is made between the preparation of the seventh and eighth edition and the conclusion is reached that the specific gravity should be 1.0375 instead of 1.016.

Chininum Tannicum. The solubility statement in 800 parts of cold water and in 30 parts of hot water is questioned.

Extractum Belladonnæ Foliorum. The prescribed alkaloidal content=2 percent is too high, as belladonna leaves containing 0.03 percent alkaloid yield an extract with an alkaloidal content of 1.6 percent.

Extractum Chinæ frig. parat. siccum. The alkaloid content of this dry extract of cinchona, prepared by cold percolation, is about 20 percent and *not* 7.5 percent.

Extractum Dulcamaræ Siccum. While all other dry extracts are diluted with acacia so that 2 parts of the dry extract represent 1 part of the pilular extract, Ph. Aust. VIII orders equal parts to be evaporated to dryness with the result that 1.7 parts of the dry extract represents 1 part of the pilular extract.

Extractum Hamamelidis fluidum. The required dry residue of 23 percent is too high and 17-20 percent is more correct, especially as the leaves should yield 20 percent of extract. For the determination of the extract of this and other drugs it would be well to use alcohol of the same strength as employed in the preparation of the respective galenicals.

Extractum Liquiritiæ. All other aqueous extracts are purified by precipitating the albuminous and mucilaginous substances with alcohol, and this should also be done in this extract.

Extractum Strychni. Extract of nuxvomica is ordered to be prepared with diluted alcohol (68%) according to the general process given under extract of belladonna leaves, which, however, also dissolves the 4 percent of fat in nuxvomica. After distilling off the alcohol this objectionable fat remains in the aqueous extract and causes same to deteriorate. This fat can be removed partly by means of paraffin or completely by extraction with petroleum ether. The alkaloid content of extract of nuxvomica might be increased from 16 to 18 percent.

Solutions of Narcotic Extracts. Solution of 10 parts of narcotic extract, 6 parts of water, 3 parts of glycerin and 1 part of alcohol, may be kept ready for dispensing. But this men-struum is unsuitable for extract of squill and Indian Camulabs.

Detection of Copper, Tin, Lead, etc., in the Ash of Extracts. The Austrian Pharmacopœia orders these metals to be detected by the addition of H₂S water or T. S. to the HCl solution of the ash. But in the presence of iron oxide in the ash, as i. e., in Extract of Iron Malato, the H₂S water, especially when not fresh, will be oxidized and sulphur will be precipitated. In this case, as well as in general, it is best to use freshly generated H₂S gas.

Extractum and Tinctura Malatis Ferri. Several analysts have reported that when the calcined ash is treated with nitric acid or a nitrate in order to completely oxidize the carbon, ferrous oxide or iron and is then dissolved in HCl, free chlorine will be evolved; but they have failed to give an explanation except that this is due to a trace of nitric acid left in the ash. As it has been found in the laboratory of Hell & Co. that free chlorine will also be evolved even when no oxidizing agent is employed, the cause of this was traced to the manganese content of the iron, as apples are free from it. By the calcination of the ash MnO is oxidized to Mn₂O₃, which acts the same as MnO₂, reducing HCl to free Cl even at a temperature of 60° C. It is recommended to heat the HCl solution of the ash, so as to drive off the free Cl, and then determine the iron content iodometrically. By taking this precaution uniform results are obtained.

Ferr. hydroxydat. dialysat. solut. It is shown that a great many dialyzed iron preparations in the market contain less than 3.5 percent of Fe and more than 0.239 percent of HCl or 0.378 percent of FeCl₃, as required by Pharm. Austr.

Hydrarg. Chloratum mite. When testing for HgCl₂ in calomel it is essential to use filter paper which is entirely free from Cl. It is recommended that such filter paper should be specified and should be included among the list of reagents, etc.

Natrium Chloratum. The flame test for potassium in sodium chloride is unreliable, quite especially as a great deal of blue glass is

not suitable and gives fallacious results. The authors recommend Koevenagel's reagent of Cobalt-sodium-hexanitrite, which produces a yellow precipitate in potassium solutions even as dilute as 1:2000. If 1 percent KCl is permissible in the official NaCl, then no precipitate will be produced in a 5 percent solution of sodium chloride.

Tincturae. The percentage of dry residue serves as the valuation of a great many tinctures, but is expressed as "*for the menstruum*" and not as in the *finished tincture*. That, therefore, the figures are too high can be seen in Tincture Benzoes, which should contain 18 percent of dry residue. Benzoin should contain 90 percent of alcohol soluble resin. The tincture is prepared by macerating 20 parts=18 parts soluble resin, with 100 parts of alcohol. As 118 parts of the finished tincture contain 18 parts of dry residue, therefore the percentage is only 15.25 and not 18.

Tinctura Strophanti. The seventh edition ordered the seed to be deoleated with ether, which, on account of also dissolving some strophantin, was changed to petroleum ether. The tincture was prepared with 90 percent alcohol. The eighth edition orders the bruised seed to be percolated with diluted (68%) alcohol into a 10 percent tincture. This preparation is unsatisfactory, as oil drops separate, gets turbid in cold weather and does not mix clear with water. The authors recommend that the drug should be standardized and that the tincture should be prepared from deoleated seed. (Such a tincture is also better tolerated by a weak stomach, not causing nausea.—O. R.)—Ph. Post, 1912, No. 4, 37-41. O. R.

Sal Karolinum Factitium: Legality of Name.—The City of Carlsbad petitioned that this name be deleted from the Hungarian Pharmacopœia, on account of being a trademark infringement. It was further suggested to change the title to *Sal factitium typi salis Karolini*. The Hungarian health board, however, decided that the present title shall be retained, as it is well known to physicians and the public, and that the designation "artificial" cannot cause any misrepresentation or confusion, and is therefore no infringement on the rights of the city of Carlsbad and its "natural" salt.—Ph. Post, 1912, No. 5, 55. O. R.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

REGISTERED PHARMACISTS—HYDROGEN PEROXIDE NOT A MEDICINE.—The conviction of the manager of a 5 and 10 cent store on a charge of dispensing and compounding medicines or poisons, namely, western peroxide or hydrogen peroxide, not being a registered pharmacist, brought up the question whether hydrogen peroxide is a medicine. It was held that technically it was a medicine, like many other articles found in grocery stores and paint shops and in the same way as alcoholic preparations for external use, water, zinc, tar, turpentine, copper, olive oil, lemon essence, resin, tooth washes, soda, some soaps, or bay rum and glycerin for the hands. Hydrogen peroxide was not claimed to be a poison, and was shown to have no medical effect when taken into the stomach, but is simply a detergent, a cleanser, and as a medical agent it was shown to be used only to cleanse and soothe the skin, to dissolve and remove impurities from wounds and ulcers, or from the mouth, teeth and ears. It is not generally or popularly known as a medicine, and therefore the sale of it was held not to be regulated by the statute under which the conviction was obtained. A dissenting opinion was to the effect that it had been shown that it is more than a preventative or detergent, as it is frequently prescribed and used as a curative agency, and that its primary and principal use is medicinal; and that it is so regarded by the state board of pharmacy.

It was also held that the word "store" as used in the first sentence of the statute means a store of the same kind or class as a pharmacy, and does not apply to a 5 and 10 cent store.

State v. Hanchette, Kansas Supreme Court,
129 Pac. 1184.

UNFAIR COMPETITION—IMITATION IN PACKAGES AND COLOR OF PRODUCT.—The Coca-Cola Company, in a suit in equity, sought protection against what it claimed to be unfair competition on the part of the

Gay-Ola Company. It exhibited various letters and circulars of the defendant, and the Tennessee Circuit Court, Western District, dismissed the bill. This was reversed on appeal to the Circuit Court of Appeals. It appeared that "Coca-Cola" is sold by the complainant in barrels or kegs, painted with a particular shade of red, and marked with the complainant's labels. Purchasers from the complainant are of two classes: First, soda fountain proprietors, who mix the essence with carbonated water and sell directly to the consumer; and, second, bottling companies, who add the necessary carbonated water, and put the product up in sealed bottles, and then sell this article to retail dealers. The defendant claimed to have discovered the complainant's formula, and to be in fact making the same thing. It wrote a series of letters to bottling companies which were engaged in bottling Coca-Cola to the effect that it would supply Gay-Ola for a less price than they were paying for Coca-Cola and that no one could tell the difference; that a substitution could be made and that Gay-Ola would, if desired, be shipped in plain, unmarked packages. The defendant also sent circular letters to soda fountain proprietors, setting out the cheap price and the merits of Gay-Ola and its identity with Coca-Cola, and quoting from a testimonial of a soda fountain proprietor that he sold it for Coca-Cola.

The appeal court considered the substantial question to be whether the complainant had a remedy against the defendant, or whether the remedy was confined to proceedings against that retail trade which was the immediate agent in deceiving the ultimate purchaser. That the defendant had planned and expected a benefit by the fraud to be practiced, and that it had deliberately furnished to the dealers the material for practicing the fraud, was hardly denied. The court held that the ultimate wrong contemplated was clearly to be classed as unfair competition, and the complainant was entitled to such relief as a court of equity could give, unless merit was found in the defense that the Gay-Ola Company had the right to make and sell the article which it did sell, and that it was not responsible for the fraud of its vendees. It was held that, the defendant being an accomplice, if not the principal, in the trick, injunction must go against it. That injunction should

forbid all attempts directly or indirectly to encourage or induce the dealer to make the fraudulent substitution.

But the complainant also asked that the injunction extend to the use of barrels or kegs painted of the same color as the complainant's, and to coloring the product itself with the same color, and to using any packages not plainly marked Gay-Ola. On this point the court said that the name adopted by the defendant did not negative an intention to confuse. The product was identical, both in appearance and taste; and the form of script used in printing the "trade-mark" names was the same. Even if the use of each of these items of similarity was lawful, when accompanied by good faith and no intent to deceive, they put the product near that dividing line where good or bad faith is the criterion, and their presence puts upon the user a burden of care to see that deception does not naturally result. The coloring matter used by the defendant was non-functional, being added to the compound solely for coloring purposes, and in the quantity necessary to give it the color of the complainant's. It was held that the article was so likely to deceive as to its origin that it should be tagged in such a way that the tag would reach the notice of the final purchaser. As to the bottling part of the output, the defendant could apparently provide reasonably efficient means of notice, and so probably prevent deception by seeing that all the bottles were stamped and labeled prominently with the name of its product. As to the soda fountain part, the court did not see how deception could be sufficiently prevented, save by giving the product a non-deceptive color, although some other satisfactory means might be brought to the attention of the court below.

The fact that the complainant supplied a part of its product to consumers in the territory where the defendant did business, only through a second company, which bought and resold it, and which was also injured by the defendant's acts, did not make the second company a necessary part to the suit. And the fact that the complainant sold its product through a system of contracts tending to maintain monopoly in a trade-marked article, did not preclude it from maintaining its suit to enjoin the unfair competition.

CONSPIRACY IN RESTRAINT OF TRADE.—A Texas corporation owned a secret formula for compounding a syrup used to make a drink called "Jersey-Creme." It entered into a contract with a bottling co-partnership, to which it agreed to give the exclusive bottling privileges in a certain territory. The bottlers agreed to buy from the corporation not less than a certain quantity of the syrup during a period of five years, and to use the corporation's copyrighted labels and bottles. The corporation became dissatisfied with the way in which the bottlers were performing their undertaking under the contract and declared it canceled. In an action by the bottlers for damages, it was held that the contract was a "conspiracy in restraint of trade" within the meaning of Section 3 of the Texas anti-trust statute of 1903. Such a conspiracy is defined by that section as follows: "Where any two or more persons, firms, corporations, or associations of persons, who are engaged in buying or selling any article of merchandise, produce or any commodity, enter into an agreement or understanding to refuse to buy from or sell to any other person, firm, corporation or association of persons, any article of merchandise, produce or commodity." "Jersey-Creme" was a "commodity" or "article of merchandise." The bottles and labels were only incidentals to the contract, which indirectly conferred upon the bottlers the exclusive right to purchase and resell the syrup.

Jersey-Creme Co. v. M. Daniel Bros. Bottling Co., Texas Civil Appeals, 152 S. W. 1187.

PERFORMANCE OF CONDITIONS.—The manufacturer of a drink contracted to assign territory to another party for the purpose of bottling the manufacturer's special drink according to his formula. The manufacturer agreed to advance the necessary advertisements to get the best results. In pursuance of this agreement he caused advertisements to be inserted in newspapers in the territory and furnished posters which were posted in the territory. There was nothing in the evidence to show that this method of advertising was not calculated to bring the business into public notice, and the other party never requested other or additional advertisements. It was held that the manufacturer had suf-

ficiently complied with his agreement as to advertising.

The manufacturer also agreed to indorse paper to a specified amount, to be secured by the other party's bottling works, which must be in good running order and worth a specified sum. It was held that the second party could not properly call for any indorsement without first showing that he possessed a plant worth the specified sum and which was in good running order.

Halling v. Wainscott, Kentucky Court of Appeals, 153 S. W. 452.

CONDITIONAL SALES—RETAKING AND SALE.—SELLER'S LIABILITY.—A firm purchased a soda fountain and apparatus under a contract of conditional sale, giving the seller 36 promissory notes, payable at intervals of a month each, for the balance of the price. The firm subsequently became bankrupt, and a trustee was appointed. The notes due previous to the bankruptcy had been paid. Those maturing afterwards were not paid. The seller of the fountain leased it to a third person, who carried on the business in the bankrupt's store, on monthly leases. The rental was duly paid, but was not indorsed by the seller upon the contract of sale. Four months after, the seller removed the fountain and apparatus from the store, and claimed to have retaken it then, and after 30 days caused notice of sale to be given, and the fountain was subsequently sold, apparently according to the provision of the New York law relating to conditional sales. That statute, Section 65, provides that where property is retaken by the seller under a contract of conditional sale, and is not sold by him at public auction within 30 days after the 30 days during which he is required to retain possession, he is liable for the return of payments made by the buyer. In an action by the bankrupt's trustee against the seller of the fountain it was held that the latter, having appropriated the rent of the fountain without crediting it on the contract, became liable to repay the installments paid by the buyer, though the contract purported to waive the statutory provision, an executory contract waiving such statutory provision being contrary to public policy. Two judges dissented.

Crowe v. Liquid Carbonic Co., New York Appellate Division, 139 N. Y. Supp. 587.

WRAPPING BREAD LOAVES IN PAPER.—A conviction was obtained under a charge of violating Chapter 15, New Hampshire laws of 1911, in not complying with a rule of the state board of health requiring loaves of bread exposed for sale to be wrapped in paper. Section 1 of the statute forbids the existence or maintenance of unclean, unhealthful, or insanitary conditions in any place where food is produced, stored or sold. Section 2 provides that "unclean, unhealthful, or insanitary conditions or practices shall be deemed to exist * * * if food in the process of manufacture, storage, sale or distribution is unnecessarily exposed to flies, dust or dirt, or to the products of decomposition or fermentation incident to such production, storage, sale, or distribution." Section 3 authorizes the state board of health to enter and inspect any place used for the production, storage, or sale of food, and on violation found to issue an order for the abatement of the condition. Section 4 empowers the state board of health to make all necessary rules and regulations for the enforcement of the act. Section 5 imposes a penalty for failure to comply with its orders. The regulation of the state board of health ordered that all bread loaves, before removed from the baking room, should be wrapped in clean, unused paper, unprinted or printed on one side only.

It was held that the mere fact that the wrapping of loaves of bread in paper before they are offered for sale is attended with some expense did not prove that the requirement was unreasonable. It was not apparent how the object could be attained at less expense. It was claimed for the defendants that the regulation was an attempt to delegate legislative power. It was held that the legislature, in the exercise of the police power, may regulate, restrain, and prohibit whatever is injurious to the public health and morals, and, if upon a reasonable construction of the act there appears to be some substantial reason why such regulations will promote the public health, they will be sustained as a valid exercise of the police power. The act in question was within the police power of the legislature so far as its purpose to secure greater cleanliness in food is concerned. The act is complete in itself, therefore the order of the board of health was not invalid as an exercise of delegated legislative power. The board in making the

order was not legislating, but was merely exercising a power conferred upon it as an administrative board.

The court added: "If the defendants had prevented the nuisance by adopting some other precaution than that of wrapping their bread in paper, it may be that they would not have been subject to prosecution for not complying with the rule; but they did not attempt to abate the nuisance in any effective way, but persisted in maintaining a condition of things about their shops and carts which the legislature had prohibited."

State v. Normand, New Hampshire Supreme Court, 85 Atl. 899.

REVIEW—SEIZURE UNDER PURE FOOD AND DRUGS ACT.—A proceeding under Section 10 of the Food and Drugs Act of June 30, 1906, praying for the seizure and condemnation of three barrels of vanilla, tonka and compound alleged to have been shipped from Chicago to San Antonio, Tex., where they were offered for sale, and that the contents were adulterated and misbranded, was dismissed by the district court for the Western District of Texas on the ground that the evidence showed that the goods seized were not transported or shipped for sale, but were shipped for the purpose of being used in the manufacture of ice cream, and therefore not liable to seizure under said Section 10, and on the further ground that the evidence failed to show that a preliminary hearing was afforded to the party from whom the sample was obtained and an opportunity given him to be heard, as provided for in Section 4 of said act. The Circuit Court of Appeals holds that the dismissal is not reviewable in that court on appeal, the proceeding in the district court being one at law and only reviewable by writ of error.

United States v. Hudson Mfg. Co., 200 Fed. 956.

SALE OF ADULTERATED VINEGAR—DEFECTIVE INFORMATION.—The Missouri Rev. St. 1909, Section 4811, makes a person guilty of a misdemeanor who "manufactures for sale or offers or exposes for sale as cider vinegar, any vinegar not the legitimate product of pure juice known as apple cider, or vinegar not made exclusively of said apple cider, or vinegar into which foreign substances, drugs or acids have been introduced." An information under the statute charged that the accused offered for sale "one barrel of vinegar

labeled and branded as cider vinegar, which was not the legitimate product of pure apple juice and was not made exclusively from apple cider." The St. Louis Court of Appeals, Missouri, holds that the information did not charge an offense under the statute, since it did not allege that the vinegar offered for sale was offered "as cider vinegar," which is the gist of the offense, under this statute. An indictment charging a statutory offense unknown to the common law must allege every fact essential to bring the accused within the statutory provision.

State v. Markus, 153 S. W. 488.

SILICA COMPOUND.—Volcanic earth dried and ground in a mill and used for external application to the human body is not a medicinal preparation for the use of the apothecary or physician as a remedy for disease. (*U. S. v. Roessler & Hasslacher Chemical Co.*, 79 Fed. 313.) The dry pulverized earth here is used as a mud bath and cannot be deemed a plaster, healing or curative. It is dutiable according to the protest as an earth, wrought or manufactured under paragraph 90, tariff act of 1909.

United States v. Von Oefele, U. S. Court of Custom Appeals.

ASK THE DOCTORS.

It is quite the fashion for the druggists to complain that the doctors buy too much of their medicines from the physicians' supply houses. Many times these supply houses sell their goods for prices as high as those asked of the doctors by the drug store. Price does not explain all the business that goes to the supply houses. Many times, too many times, the supply house furnishes a very inferior grade of goods so that quality does not explain why they get the business. The simple reason why the doctor buys so often as he does from these houses is that they keep asking him to buy from them. They ask him by carefully written circular letters and by expert traveling salesman. If the druggist will ask the doctor to buy from him as often as he is asked by the supply houses, the druggist will get his trade unless he is far above

the competing quotations, quality for quality. Get physicians' samples from your pharmaceutical manufacturer, put them in the physician's hands personally with an explanation of the use and price of the goods. Send personal letters to every doctor in town once a week. If the number is small, they can be written on the typewriter. If the number is large, reproduce them on a mimeograph or some such machine. You ought to have one anyway. Ask the doctor to buy from you and ask him just as often as you can. You will get results as sure as you do so.—*The Spatula*.

HOW TO INCREASE YOUR SALARY.

To sell a customer a toothbrush, for example, does not require a crafty and elaborate approach, such as none but a veritable Mephistopheles could attain, nor is it necessary that the clerk be a mind reader in order to seize the exact "psychological moment" to close the sale. What that moment is, his own common sense, good judgment or intuition, whatever you please to call it, will tell him. He does not need a handbook on psychology to tell him just when that crucial moment arrives.

In nine cases out of ten when you have shown the customer the superiority of the 25 cent brush he will choose it in preference to the 10 cent or 15 cent brush. Thus you will protect your employer's profit, and in all probability, the customer being pleased with the better service the brush gives him, will come back for another when he needs it.

Remember, that it is the customer both you and your employer are working for. It is the customer who pays the wages of you both. If it were not for the customer you and your employer would be looking for other jobs. So go just as quickly to serve him as you would for your employer, as the customer is the employer of you both, and therefore, he is the man to be pleased if the store is to make money. If the customers are not pleased the store will not prosper, and your chances of getting better wages go a glimmering.—*Voice of the Retail Druggist*.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whippley, 2342 Albion Place, St. Louis, Mo.

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(Signed) J. H. BEAL, Editor.

Sworn to and subscribed before me this 26th day of March, 1913.

(Seal) JAMES M. SPIKER,
Notary Public.

(My commission expires Jan. 26, 1914.)



"THE DEADLY BICHLORIDE TABLET."

Under the above title the editor of the *Practical Druggist* alludes to the fact that "hundreds of people die annually by swallowing bichloride tablets or a solution of the same," and makes some very pertinent suggestions for the distinguishing of such tablets by means of color, shape, character of packages, etc.

The regulations which seem to him most effective are those prescribed by the German Pharmacopœia, namely, that they shall be composed of equal parts of bichloride and sodium chloride, colored bright red with an aniline dye, cylindrical in shape, twice as long as thick, each tablet wrapped in black paper bearing the word poison in white letters, and the amount of bichloride, and be dispensed in glass bottles which are also to be labeled poison.

Certainly such precautions are none too great in view of the danger involved.

A FAMILIAR EXCUSE.

"Some criticism has at times been indulged in because the Denver "bunch" seemed to run things at these annual gatherings, and while said "bunch" pleads guilty to the charge, it is argued in extenuation, that somebody has to run things, and none would be better pleased than they if the attendance from other points should be so large as to put Denver in a decided minority."

The above is from an article in the *Rocky Mountain Druggist* announcing the next annual meeting of the Colorado Pharmacal Association.

Any one who has seen the Denver druggists in action can believe that they are always ready to do their full share of work (or more, if necessary, to to make things go), but no one who knows them well will believe that they care a "rap" for the glory, or that they want to run affairs for their own benefit.

But the above was not quoted for the purpose of defending the Denver druggists against a silly and unjust charge, but because the same excuse will soon be heard in other states where the stay-at-home druggists will try to cover up their own delinquencies by the same puerile whine.

Any one who has had any experience in association work knows that those who do the most of it, do it from a sense of duty, and would gladly relinquish the offices to any others who would accept the duties annexed.

Giving as a reason for not attending the state meeting that some particular lot of people want to run the affair is about the most pitiful excuse that can be offered, and the druggist who is half a man won't offer it.

The chances are that you will be able to attend if you only think so, but if for any reason you can't go, for pure decency's sake send the boys a telegram saying, "More power to your elbows. I'm with you in spirit. If you want me to see my Senator or Representative, or need any financial help for legislative expenses next winter, just wire yours truly."

You'll think a lot more of yourself than if you fall back on the antiquated fib hereinbefore referred to.

"Every man can tell how many goats or sheep he possesses, but not how many friends."—*Cicero*.

The Bulletin Board

COMMUNICATIONS RESPECT- ING THE A. PH. A. HOME.

DENVER, COLO.

I am heartily in favor of carrying out your suggestions given in the *JOURNAL* for November, especially in regard to providing fireproof quarters for the repository of the historical collection. I do not believe that the maintainence of such a structure would put an excessive tax on the individual member.

I thank you for asking for an expression of my views on the subject.

Fraternally yours,

WM. BEUKMA.

COLUMBUS, OHIO.

Your circular letter concerning the A. Ph. A. Home has just been received.

I am heartily in sympathy with this movement and think it is just what we need for the furtherance of American Pharmacy.

Very truly yours,

M. N. FORD.

MINOT, N. D.

In response to the circular letter in reference to "Need of an Association Home," I would say that I am heartily in favor of such a proposition and do not see why the A. Ph. A. should not have one with its "sixty-one years of honorable and useful activity."

Wishing the A. Ph. A. success in all its undertakings, and assuring you that it is an honor to be a member of the association,

Yours very truly,

WM. L. BROMME.

NASHVILLE, TENN.

Answering your circular letter of recent date, I am of the opinion that the Association should have such a building as you mentioned and will be glad to cooperate with the Association in any way I can to this end. It certainly should be a source of satisfaction to the members of this Association if we had a permanent home and

think it would be incentive for new members.

Wishing the Association success in this line, I remain

Yours truly
F. L. SMITH.

PITTSBURGH.

By all means let us have permanent official headquarters, to which the living may look as the Mecca of pharmacy. And where, to our honored dead, we may establish permanent, useful memorials.

Fraternally yours,
LOUIS EMANUEL.

PHILADELPHIA.

I am heartily in favor of the project for a permanent home for the A. Ph. A. and will use my best influence to further the plan in every way possible.

Very truly yours,
CHARLES H. LAWALL.

CINCINNATI, OHIO.

With reference to an Association Home of which you speak in circular letter, would say that this no doubt would be a splendid undertaking, provided particularly if the Home be located in Cincinnati, which in my poor judgment would for many reasons be the most advantageous place to locate it.

With kindest regards,

Very truly yours,
FRANK H. FREERICKS.

NARRAGANSETT PIER, R. I.

In reply to your circular letter, would say that I am heartily in favor of the proposition, and that I would look upon it as an absolute necessity, which should be attended to as soon as possible.

Respectfully,
P. R. DAVIS.

CANTON, OHIO.

In reply to your circular letter just received regarding the matter of an "Association Home," would say that I consider it a very noteworthy project and it certainly would give the A. Ph. A. a much higher and firmer standing among pharmacists, physicians and laity and I certainly would favor it, providing means could be secured for the maintenance of such an institution.

Very truly,
C. R. ROTH.

BALTIMORE.

I heartily approve of an "Association Home." I have read the letter of Mr. J. W. England and agree with him that "Procter's greatest monument is his monumental work on Pharmacy, and no statue can continue this work; research work only can do so."

A building for this work, with a library known as "the William Procter Memorial Library," will, I feel confident, appeal to every member of the Association, and its establishment can soon be financed.

Very Sincerely yours,
CHAS. H. WARE.

WINNIPEG, MANITOBA.

Received your circular letter asking for expression of opinion as to "Need for an Association Home." Am heartily in favor of the idea. It should be located on the map of North America as central as possible so that pharmacists from North, East, South and West can take it in in their travels.

Yours truly,
M. C. COLCLOUGH.

NEW YORK CITY.

I am in favor of a permanent home for the A. Ph. A., with laboratory equipment for working out problems for U. S. P. and N. F. preparations, and not only that an adjoining botanical garden would be of great benefit to the profession, instructing and educating, the best way now to cultivate medicinal plants, a matter of high importance, for example, hydrastis, it is getting scarce. The same way with ipecac. The future problem for us all will be to cultivate medicinal plants, especially those which are gradually disappearing. The Department of Agriculture is doing its best; their book on American Medicinal Leaves and Herbs is a valuable edition, but it does not cover all medicinal plants, so long as important plants like hydrastis are not mentioned.

Respectfully,
W. J. KOCH.

GADSDEN, ALA.

I am always in favor and willing to aid in any necessary, progressive move, and I count this the most necessary and progress-

sive move made by our great Association in its history. I don't see how the A. Ph. A. has done without this home so long, and am sure every member sees this great need, and is willing to work for the same.

Yours fraternally,
C. WHORTON.

SEATTLE, WASH.

I certainly am in favor of an Association Home where permanent offices and headquarters, with experimental laboratories for the carrying out of N. F. and U. S. P. problems, containing library and offices. It seems to me that a society like ours which edits the N. F., should be more active in its propaganda.

If I can be of any further service, kindly let me know.

Yours truly,
D. C. BARTLEY.

CORNING, CALIF.

Your circular letter relating to the acquisition of an A. Ph. A. Home, is received.

I think such a home should be acquired. The wisdom and necessity of such a move is scarcely debatable. It is essential beyond question.

If a membership tax should be levied looking to the erection or purchase of such a home, I will gladly pay my share.

Yours truly,
DR. BYRON F. DAWSON.

OAKLAND, CALIF.

In regard to the proposition of an Association Home where archives can be maintained and where also a laboratory shall be established, it seems to be a very good one, and one which should have the approval of the entire membership.

Sincerely yours,
BOWMAN DRUG CO.,
R. A. Leet, Sec'y.

ST. LOUIS.

I have your letter regarding the necessity for establishing a permanent building or headquarters for the American Pharmaceutical Association. I beg to state that I am heartily in favor of the plan. We need a library and research laboratories such as those of the Deutsche Apotheker Verein or the Pharmaceutical Society of Great Britain. The cost of maintainance is,

of course, to be considered, and if a satisfactory method of securing the necessary permanent funds be devised, I shall certainly vote for the proposition.

LEO SUPPAN.

NEW YORK CITY.

In reply to your recent communication relative to the need of an Association Home for the A. Ph. A., it would seem to me very desirable that the Association should provide itself with a permanent home, and I do not see any reason why the project could not be successfully carried through and properly maintained.

V. CHAPIN DAGGETT.

PITTSBURGH, PA.

I have read your article and several other items relative to establishing a home wherein may be safely stored and kept for reference the very valuable works and archives of the American Pharmaceutical Association and the other very valuable literature pertaining to the art of pharmacy and its allied branches, and perhaps providing the facilities of a laboratory where formulas may be experimented upon and much other important work performed.

There is no doubt in my mind but that your suggestion will prove successful and that it will be highly appreciated by many of the pharmacists of the country.

HERMAN G. BLANK, JR.



SECTION ON HISTORICAL PHARMACY.

The Historian of the Association and the members of the Section on Historical Pharmacy are exceedingly desirous of making the sixty-first annual meeting of the American Pharmaceutical Association at Nashville, Tenn., notable by as complete a collection and presentation as possible of historical data and material relating to the practice of pharmacy in the southern states during the Civil war. An appeal is therefore made through the Journal to all members for contributions on this topic—personal reminiscences, data as to prices and drugs used, the use of native drugs in place of foreign drugs cut off by the blockade, the cultivation of botanical drugs, etc. The story of how the pharmacists of the South struggled to supply the

much-needed drugs and medicines and their utilization of native plants and minerals has never been adequately told. It is a chapter in the history of American pharmacy that our Association should compile as fully as possible.

All contributions will be welcome, anything that will add to the interest and value of the history of pharmacy during the Civil war. This topic seems particularly appropriate at the forthcoming meeting of the Association at a city so near many of the battlefields of the Civil war and where many still live who practiced pharmacy then. It is hoped that the responses will be general and generous. Papers or historical material may be forwarded to the Historian, the Chairman of the Section or to the Secretary.

FREDERICK T. GORDON,

Secretary Historical Section.

2113 W. Norris St., Philadelphia, Pa.



AMENDMENTS TO KANSAS PHARMACY BILL.

Representing the influence of the Committee on Drug Reform in connection with the Legislative Committee of the Kansas Pharmaceutical Association:

1. Applicants for examination by the State Board shall have had, beside the practical experience of four years in compounding physicians' prescription, in the general duties of pharmacy, at least one year of high-school work or its equivalent and otherwise be duly qualified.

2. All prescriptions of practicing physicians shall be filed and retained by the dispenser, serially numbering, dating and filing the same. Said serial number, date and signature, together with proper directions, shall be placed upon the package or container in which said medicine is dispensed. Failure to keep prescription files in accordance with the provisions of this act shall be prima facie evidence of the violation of this law. The prescription files of the druggists shall be open to inspection by the proper authorities at all times.

3. Practitioners of medicine administering or supplying to his patients such articles as may be fit, proper and necessary, and dispensed by him, shall comply with the Kansas Food and Drugs Law and be subject to inspection as provided in said law. And it is also further provided that it shall be lawful for retail dealers to sell the usual domestic medicines and remedies in unbroken packages, not including any article enumerated in Schedule A and B. In case such dealers shall procure a license from the State Board of Pharmacy for a fee of \$2.50 annually, not

as a registered druggist, shall be used dealer and said annual fee shall be paid within thirty days of the expiration of said license, otherwise said fee shall be \$5.00.

4. Every one dispensing from a private stock shall be responsible for the quality of all drugs, chemicals and medicines he may sell or dispense.

5. The State Board of Pharmacy is authorized and directed to make and publish uniform rules and regulations not in conflict with the law, which rules and regulations may include, if necessary for the proper execution of the law, the collection and examination of medicines and drugs kept for sale or dispensing by any pharmacist or kept in stock by any physician, merchant or dispenser. Samples thus collected may be submitted to the Drug Laboratory established under the Food and Drugs Act. This Laboratory is located at the University of Kansas, School of Pharmacy.

L. E. SAYRE.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



PHILADELPHIA BRANCH.

The last meeting of the Philadelphia Branch of the A. Ph. A. was held on the evening of March 4, 1913, with President Stewart in the chair.

The following resolution was submitted and adopted by the Branch:

WHEREAS, William McIntyre, Treasurer of the Philadelphia Branch of the American Pharmaceutical Association, and its first President, who has been a constant attendant at the meetings of the Association, died suddenly in the midst of his activities February 1, 1913; be it

Resolved, That the Philadelphia Branch of the American Pharmaceutical Association record upon its minutes the natural feelings of regret incident to the loss of a faithful officer, and a wise counselor whose honorable

career as a pharmacist and citizen with high ideas of civic usefulness will cause his name to be cherished by his associates with loving remembrance.

We convey our sympathy to the bereaved family.

Committee: (Signed)

EDWIN M. BORING,
W. L. CLIFFE,
FRANKLIN M. APPLE.

In the absence of Mr. George M. Beringer, chairman of the committee having under consideration a set of resolutions offered at the previous meeting of the Branch, Prof. F. P. Stroup submitted the following on behalf of the committee:

To the Philadelphia Branch of the American Pharmaceutical Association:

The Committee, to whom was referred the resolutions offered by Dr. F. E. Stewart at the last monthly meeting of the Branch, met at the home of Mr. Ambrose Hunsberger, on Wednesday evening, February 26. In the absence of Mr. Charles E. Vanderkleed, who had been appointed as Chairman, the Committee organized with Mr. George M. Beringer as Chairman, and Mr. Ambrose Hunsberger as Secretary. After very careful consideration of each paragraph of the resolutions, we re-cast the same and present herewith our recommendations in the form of the following re-draft:

WHEREAS, Progress in the science of medicine and pharmacy is dependent upon co-operative materia medica research on the part of the medical and pharmaceutical professions and manufacturing houses engaged in the materia medica supply business; and

WHEREAS, Cooperation is impracticable unless all concerned adopt the same code of ethics for regulating their relations with each other and the public at large; and

WHEREAS, Cooperation between practitioners of medicine and pharmacy in the investigation, classification and standardization of materia medica products and in the development of knowledge concerning the physiologic action, therapeutic effects and comparative value of such agents is impracticable when these products are controlled by manufacturing houses or their sale promoted by misleading advertising; be it therefore

Resolved, That the Philadelphia Branch of the American Pharmaceutical Association recommend that the American Pharmaceutical Association request the cooperation of the American Medical Association and allied organizations and of Government Departments in formulating a plan by which a bureau of control, representative in character, shall be established, whose duty it shall be to frame rules and regulations for the guidance of those interested in the manufacturing, prescribing and dispensing of such products; and be it

Resolved, That the work of the proposed bureau shall include such functions as the following:

1. The naming of each new materia medica product in conformity with scientific nomenclature.

2. The determination and publication of tests for the identity and purity of each new products introduced.

3. The study of methods of selecting, preparing, preserving, standardizing, compounding and dispensing new materia medica products, and publishing the same for the benefit of those concerned in the professions of medicine and pharmacy.

4. The study of the patent laws relating to materia medica inventions with the view of modifying them to accomplish their true object, namely, the promotion of progress in the science of materia medica and in the arts of pharmacy and therapeutics.

5. The study of the trade mark laws to determine their proper application to commerce in drugs so that brands of materia medica products may be clearly identified and the manufacturers protected from the counterfeiting of brand marks and the public protected from fraud.

6. The scientific classification of materia medica products and preparations; and be it

Resolved, That the manufacturers engaged in the pharmaceutical and pharmaco-chemical industries be requested to organize scientific departments through which the physicians, pharmacists, chemists, botanists, physiologists and other experts employed by them may be properly recognized and the manufacturer thus held responsible to the medical and pharmaceutical professions; and be it

Resolved, That bulletins stating the results of collective investigations of each new materia medica product should be published by the scientific departments of the manufacturers under the consorship of the bureau.

Each bulletin should contain all available knowledge concerning the product or preparation under investigation. It should include a name which shall be equally free to all having the right of manufacture and, if such exists, a name for the brand which shall identify the manufacturer; include tests for identity and purity; methods of preparing the product or preparation and of standardizing it if a method is available, and also include knowledge available at the time concerning the therapeutic properties, doses and methods of exhibiting the product; and be it

Resolved, That the manufacturers should send sufficient supplies of each new materia medica product or preparation undergoing collective investigation to hospitals, dispensaries and other public institutions, and to a selected list of well known clinicians for clinical test; and be it

Resolved, That the knowledge thus accumulated should be epitomized and published by the bureau in some form of special publication.

Respectfully submitted,

GEORGE M. BERINGER, Chairman.
CHARLES E. VANDERKLEED,
JOSEPH W. ENGLAND.

The presentation of the report of this Committee brought forth considerable discussion, which resulted in a motion to lay upon the table for future consideration.

Following this action a motion to reconsider prevailed and the report of the Committee was adopted with instructions to the Secretary to submit the resolutions as adopted, to the consideration of the parent body.

A spirited debate preceded the final adoption of the resolutions, a majority of the members indicating their desire to have this Branch go on record in favor of the resolutions, believing that a step forward would be made in the uplift of pharmaceutical practice. The most strenuous objection to the resolutions was voiced by Prof. Henry Kraemer, who is a member of the Council of Pharmacy and Chemistry of the A. M. A. In stating his objection Prof. Kraemer "advised against the adoption of these resolutions in the present form for two reasons: (1) Because much of the proposed work was being already effectively done by the Council on Pharmacy and Chemistry of the American Medical Association, and (2) because it seemed improbable to him that the A. Ph. A. could finance such an undertaking."

The following list of names was presented by the Nominating Committee as its choice for officers of the Branch to serve during the ensuing year:

President—W. L. Cliffe.

First Vice-president—Freeman P. Stronp.

Second Vice-president—Charles E. Vanderkleed.

Secretary—Ambrose Himsberger.

Treasurer—Robert Fischelis.

Committee on Practical Pharmacy—E. E. Cook, Dr. John R. Minchart, Samuel C. Henry.

Committee on Professional Relations—H. C. Blair, Frank E. Morgan, Richard Cuthbert.

Committee on Membership—William E. Lee, Frederick T. Gordon, William A. Pearson.

A motion was adopted instructing the Secretary to cast a ballot electing the list as presented.

Adopting the further suggestion of the Nominating Committee, it was decided to omit electing officers for the Scientific Section, it being suggested instead that if it

was deemed desirable to hold a special scientific meeting, that the First Vice-president of the Branch be empowered, as Chairman of such a meeting, to make the necessary arrangements, and that the Treasurer of the Branch act as Secretary and keep the minutes of any such scientific meetings.

The Nominating Committee consisted of Julius W. Sturmer, John K. Thum and Henry Kraemer.

The death of Prof. Oldberg being announced, a committee to draw up proper resolutions was appointed, consisting of Messrs. Kraemer, Blair and Stewart. Prof. Kraemer eulogized the high character of Prof. Oldberg, saying that he stood as a high mountain peak in American Pharmacy; that he had done more to further professional relations and elevate pharmacy than any other man, and that he was a man of fine character, unfailing courage and extraordinary ability.

Discussion of the topic of the evening, "The Status of the Qualified Assistant as to Qualifications, Responsibilities and Limitations," was opened by Mr. Samuel C. Henry. The speaker described the arduous efforts made in the direction of placing the Qualified Assistant in a proper and generally understood position. Much effort has been spent, said the speaker, in the direction of elevating pharmacy in general. Qualifications had been raised in every direction except that of the Qualified Assistant, who was left to remain in the same position of responsibility, or lack of the same, that he had occupied since time immemorial. The problem involved in the Qualified Assistant, consisted chiefly in that no one seemed to know the limit of his responsibility. While it was generally assumed that under present laws, a Qualified Assistant had the right to assume full charge of a drug store, during the temporary absence of the proprietor, the question arose, What is a temporary absence? Any absence was temporary, so long as the absentee contemplated coming back. This might mean a week or a year. This confused condition of affairs resulted in many stores being run practically by Qualified Assistants. Since this was a fact, and there being no evident inclination to limit the present so-called rights and privileges of the Q. A., a step in the right direction would be to require higher qualifications from him. The speaker strongly favored four years of practical experience in a retail store as a pre-

liminary to the issuance of a Qualified Assistant's certificate.

Mr. F. M. Apple thought the Qualified Assistant situation was a disgrace to Pharmacy, and strongly urged an extension of the number of years of practical experience, and further recommended a practical examination by the State Examining Board, approaching in its requirements of proficiency, the averages necessary for the certificate of Registered Pharmacist. The speaker also directed attention to the reprehensible practice of retail druggists who dishonestly vouched for the time of men who really do no actual practical drug store work.

The topic was further discussed by Messrs. Kraemer, Fishelis, Blair and others present, and the debate ended with the adoption of the following resolution:

Resolved, That we, the members of the Philadelphia Branch of the A. Ph. A., request that the Pennsylvania State Pharmaceutical Examining Board require practical examinations of the applicants for the certificate of Qualified Assistant Pharmacist."

This resolution was unanimously adopted upon motion of Mr. Apple, seconded by Mr. Henry.

• AMBROSE HUNSBERGER, Secretary.

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CITY OF WASHINGTON BRANCH.

The regular March meeting of the City of Washington Branch of the American Pharmaceutical Association was held March 12, 1913, at the National College of Pharmacy, the meeting being called to order at 8:15 p. m., by Dr. Lyman F. Kebler, the president.

Dr. S. L. Hilton was called upon and read the following communications addressed to him, from the Honorable Francis Burton Harrison, M. C.:

"February 24, 1913.

"It gives me pleasure to accept your kind invitation to be present at the meeting of the City of Washington Branch of the American Pharmaceutical Association at the National College of Pharmacy on Wednesday evening, March 12, at 8 p. m."

"March 11, 1913.

"Several days ago you were kind enough to extend me an invitation to be present at a meeting of the Washington Branch of the American Pharmaceutical Association on tomorrow evening, which I accepted. I regret exceedingly that I will be unable to attend on account of a meeting of our Committee (Ways and Means) at the same time,

to discuss tariff matters, and I want to assure you that I am greatly disappointed."

The communications were received and regret expressed that Congressman Harrison was unable to attend as anticipated.

Mr. Hilton was then elected Secretary pro tem, in the absence of the Secretary.

Dr. Kebler made a short statement covering the subject of anti-narcotic legislation and called upon Mr. M. I. Wilbert to open the question.

Mr. Wilbert's paper showed the extent to which anti-narcotic legislation had advanced throughout the fifty-five political divisions of the United States, and that the laws governing the sale of narcotics were becoming more stringent and more uniform; that the necessity for interstate regulation of the sale of narcotics has become generally apparent, and that if a measure to govern such traffic were introduced into Congress, it would receive the support of law-respecting pharmacists and physicians. He pointed to the endorsements of the National Drug Trade Conference held in Washington, January 15, 1913, and to that of the Ninth Annual Conference on Medical Legislation, held in Chicago, February 25, 1913, for a bill of this character, and showed clearly that the objections thereto were of minor character and could be effectually eliminated. He described the merits of H. B. 28,277 (the Harrison Bill), and made clear that such a bill would effectively remove the present deplorable conditions existent with regard to the sale of narcotic drugs.

In addition he submitted statistics showing that 1,170,000 kilos (22,722 cases), of coca leaves were produced in Java, and of this quantity 179,540 pounds, representing approximately ten tons of cocaine, or one-half the product, was used in the United States. This quantity does not include the production of coca in other countries, much of which is imported into this country.

Mr. Hilton called attention to the Drug Trade Conference meeting and pointed out some of the defects of the bill, H. R. 28277, apparent to the conference, namely Section 4 and Section 10.

With the further discussion of the Harrison Bill, Dr. W. C. Woodward called attention to the fact that it was unfortunate that a law of the kind proposed would necessarily be a burden in a greater or less extent to the pharmacist, who would be the one

affected by it. He also remarked that the government in this matter had a dual potentiality, that of regulating interstate commerce, and, further, that of going into a state and taxing those engaged in the traffic, both of which being made necessary by the features involved. Provisions requiring the limiting of the issue of licenses to those actually registered and licensed as physicians and pharmacists, he believed, were absolutely imperative, and he regretted that both Dr. Hamilton Wright and Congressman Harrison were not present to hear the views of the members in this matter. He stated that Dr. Wright had represented the United States Government at The Hague at several conferences held for the purpose of controlling habit-forming drugs of the world, and that he no doubt would learn something and would be willing to meet those interested half way, so that an agreement might be reached, and thereby secure by act of Congress a law controlling said products, saving the honor of the United States before The Hague.

A bill as proposed by the Drug Trades Conference was then presented by Mr. Wilbert.

Dr. Alsberg, Chief of the Bureau of Chemistry, Department of Agriculture, said specifically that he was in favor of such legislation but had not sufficiently considered what had been offered to express any definite view on the pending, or proposed official capacity to enforce the present laws to their limit. He favors—although he did not express himself fully—the drafting of a bill covering the sale of cocaine solely, and that another bill be provided for the other habit-forming drugs. He, himself, desires statistics of a definite character showing what becomes of narcotic drugs, i. e., what part is legitimately used and what per centum is illegitimately used.

The question of external remedies containing narcotics was brought up by Mr. W. S. Richardson, who believes that the sale of which should not be restricted by the provisions of the proposed legislation.

Following a minor discussion of the question raised by Mr. Richardson, the bill as proposed by the Drug Trade Conference was again taken up and defended by Dr. Woodward, who declared that the physician could not keep an accurate and complete record of each dose of a narcotic which he might pre-

scribe. Further discussion was participated in by Messrs. Fuller, Wilbert, Kebler, Alsberg, Richardson, Hunt, Hurlbaush, Elmer, Mankin, Hilton, and Dr. Crampton, all favoring the enactment of a law by Congress controlling interstate commerce in habit-forming drugs. Dr. Crampton dwelt at some length upon an agreement of interests, and also cooperation with proper executive officers having the enforcement of such laws in the drafting of proper regulations for the enforcement thereof, and upon the coordination of all revenue laws which is so desirable.

The next meeting will be held April 16, 1913.

Respectfully, submitted,

HENRY B. FLOYD, Secretary.

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SAINT LOUIS BRANCH.

The Saint Louis Branch of the American Pharmaceutical Association met in regular session in the Saint Louis College of Pharmacy on February 28, 1913, with President Ihardt in the chair.

The minutes of the January, 1913, meeting were read and approved.

In the absence of all the members of the Memorial Committee the secretary read their letter to Mr. Edward Mallinckrodt expressing the sympathy of the Branch in the death of his wife.

The secretary then presented a bill for \$5.25, covering the expense of postage used in sending out calls for the January and February meetings, and other correspondence of the Branch. On motion of Mr. Collins the bill was allowed.

A motion was then made by Dr. Whelpley, seconded by Professor Hemm, and carried, that the secretary make a full report of all oral communications, and to record by title only the written papers.

The chair then took up the program, and called upon Professor Suppan, who presented a note on the Aconitine Content in Tincture of Aconite as given in a synoptical report sent out by Professor Ladd, State Food Inspector of North Dakota. In commenting on the report, Professor Suppan stated that the results given were very interesting, but they were defective in the respect that they failed to state by what process the tinctures other than those prepared from the fluidextracts were made; nor was

there anything in the report to indicate how long the tinctures examined had been kept in stock—an important point to consider in view of the fact that aconite and its preparations deteriorate readily.

Doctor Whelpley then made a motion, which carried, that Professor Suppan be instructed to continue his investigations, and to make determinations of the Aconitine Content in Tincture of Aconite as found in the drug stores of Saint Louis.

The chair then called upon Doctor Whelpley, who read a paper entitled, "The Proposed Home of the American Pharmaceutical Association." On supported motion the paper was received and filed.

Professor Suppan made a motion, seconded by Mr. Gietner, that the Branch go on record as favoring a permanent Home for the American Pharmaceutical Association.

Professor Suppan then stated that he had a talk with Mr. L. P. Jensen, noted landscape architect, who is willing to give us an illustrated paper at a future meeting of the Branch on the plants growing about Saint Louis which now are used in preparations sold by the retail druggists of this city. He concluded by saying that a paper of this kind would be very interesting, especially in the early spring, for it will furnish us a kind of guide for our visits to the Missouri Botanical Garden, and in gathering plants for our herbarium.

The speakers of the evening were extended a vote of thanks and on motion the meeting adjourned.

J. W. MACKELIEN, Secretary.



PITTSBURGH BRANCH.

Those who were present at the meeting of the Pittsburgh Branch, Friday evening, March 14, were fortunate in being permitted to listen to two very instructive lectures, each filled with a fund of information of the most interesting character. Dr. A. F. Judd gave a talk on the rubber-growing industry, beginning at the original source from whence rubber was first found along the course of the Amazon River, Brazil. The care taken by the Brazilian government to maintain its monopoly of the product and how it was eventually defeated in its purpose. The story of how the seed was obtained and the manner in which it was successfully gotten out of the country and the

experimental work done to give it an adopted home in other sections of the world by the distribution of the seed thus obtained. Dr. Judd said that had the destructive methods pursued in the securing of the sap, followed by those who were engaged in its production in Brazil continued, and the smuggling of the seed out of that country under the auspices of the English government had failed of success, there would long since have been a rubber famine, and the immense manufacturing plants devoted to the manufacture of articles made from rubber of today could never have been brought about.

Dr. J. H. Wurdack continued his lecture, the first chapter of which he delivered at the February meeting, and his description of how the various rocks are formed, and the processes through which they pass, the difference in their chemical constituents and what causes these differences was extremely interesting and replete with instruction. Dr. Wurdack told how heat, moisture, pressure and the action of the elements all play their respective parts in the producing of the many kinds of rocks we know and of which our knowledge consists largely of their names only.

The old officers of the Branch were re-elected as follows: President, Andrew Campbell; First Vice-President, Louis Saalbach; Second Vice President, P. G. Walter; Third Vice President, Leonard K. Darbaker; Secretary, B. E. Pritchard; Treasurer, P. Henry Utech. For Committee Chairmen: Membership, Chas. E. Willets; Practice, F. J. Blumenschein; Medical Relations, Geo. W. Kutscher; Education and Legislation, J. H. Beal; Publicity, B. E. Pritchard.

B. E. PRITCHARD, Secretary.



CHICAGO BRANCH.

The March meeting of the Chicago Branch of the American Pharmaceutical Association was especially designed for the graduating classes of the Schools of Pharmacy represented in the Branch.

In addition to a goodly attendance of teachers and students from the Chicago pharmacy schools, a large delegation of students, led by Professors Timmons and Linton from Valparaiso, attended the meeting, which was held on Tuesday evening,

March 18, at the University of Illinois School of Pharmacy.

The topic of the evening was "The Building up of a Drug Business," and the discussion was led by Mr. James W. Morrison, who presented the subject of the relation between wholesaler and retailer. He said to the young men that no one should consider purchasing or establishing a drug business who had not sufficient money to pay for at least two-thirds of the initial investment. Furthermore, that a reputation for honesty and fair dealing even as a clerk counted more when it came to establish a line of credit with the wholesaler than did a good bank account or rich relatives.

Mr. I. M. Light presented the advantages of organization to the retailer and dwelt at length on the activities of Chicago Retail Druggists' Association, the largest local organization of druggists in the world.

Professor George D. Oglesby spoke from the standpoint of ethical pharmacy and especially of the difficulties of conducting a purely ethical pharmacy.

Mr. C. A. Storer discussed prescription pricing and the value of side lines; President W. B. Day presented the necessity and value of moral and business honesty, and a number of others, retail druggists and pharmacy teachers, discussed the subject.

Resolutions of sympathy relative to the death of Professor Oldberg and of Mrs. Fred W. Meissner, of LaPorte, were unanimously adopted.

E. N. GATHERCOAL, Sec'y.

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NEW YORK BRANCH.

The regular meeting of the New York Branch of the American Pharmaceutical Association for the month of March, was held on the evening of Monday, the tenth. President C. O. Bigelow was in the chair.

The minutes of the preceding meeting were not read, but in the future the reading of the minutes will not be dispensed with.

A healthy cash balance was reported by Treasurer Joseph Weinstein.

For the Committee on Membership, Louis Berger, chairman, announced the beginning of a definite campaign for new members.

Peter Diamond, chairman of the Committee on Fraternal Relations, asked for some light on the matter of a joint meeting with the county medical society. Secretary Craig

read a letter from the medical society bearing on the same subject. Mr. Diamond was instructed to consider the feasibility of a joint meeting.

Included in the report of the Committee on the Progress of Pharmacy, presented by G. C. Diekmann, were references to the following topics: "Adulterated Linseed Oil in Germany;" "Narcophine, a Succedaneum for Morphine;" "The Improvement of Medicinal Plants by Cultivation;" "Poisoning by Camphor;" "The Signs of Overdosage in Digitalis Medication;" "Reversed Rhythm of the Heart;" "A Certain Cure for Tapeworm;" "Ichthyol and Substitutes Therefor," and "The Preparation of Organic Reagents for Inorganic Analysis." These topics were discussed by Messrs. Weinstein, Mayer, Mansfield, and Raubenheimer, and the report was duly received.

W. C. Anderson, reporting as chairman of the Committee on Education and Legislation, made a brief but comprehensive review of the pharmaceutical phases of national legislative activity. At the invitation of Mr. Anderson, John Roemer told of the pharmaceutical measures getting attention from the state law-makers at Albany. C. A. Mayo remarked that there were pending in the twenty-nine state legislatures then in session, sixty-four bills affecting pharmacy. T. F. Main brought up in addition the matter of the effect of the state weights and measures law upon the drug trade. The report of the committee was duly received.

As chairman of the Committee on Memorials, C. A. Mayo presented two sets of resolutions in memory of Ewen McIntyre and Thomas P. Cook. These resolutions were duly adopted.

A paper entitled "A Home for the American Pharmaceutical Association" was presented by H. V. Arny, and was received with a considerable display of enthusiasm in the project with which it dealt. The author pointed out quite clearly the advantages that would accrue to the Association and to pharmacy as a profession if the organization which represents the best and most advanced interests in all branches of the calling had a home wherein its executive headquarters and its publication offices might be located, and which might afford laboratory facilities for original research and the application of suggestions relating to official drugs and formulas.

The matter with which Mr. Army's paper had to do was discussed by Messrs. Roemer, Mayer, McElhenie and Mansfield. The outcome was the adoption of a motion that the paper be offered for publication in the JOURNAL of the Association and that the New York Branch lend its aid and influence to the furtherance of the project.

In a paper entitled "On the Uniformity of Drug Standards and Uniform Requirements in Dispensing," John Roemer reintroduced the subject brought up at the February meeting in a paper received from L. E. Sayre, of Lawrence, Kansas. Mr. Roemer was of the opinion that Mr. Sayre was endeavoring to interest the American Pharmaceutical Association in the necessity for some endeavor toward the correction of the evil that lies in the exemption of dispensing physicians from the provisions of pharmacy and drug laws. His belief was that only through legislation could the desired end be attained and the welfare of the public safeguarded.

Apathy on the part of the pharmacists, said Mr. Roemer, is largely responsible for the deplorable condition that exists because of the dispensing of drugs without the law. Therefore he contended that pharmacists should assume the right to essay the correction of this condition and should, through their associations, co-operate with the better thinkers of the medical profession against the evil which assailed both. The medical societies are ready to co-operate, he said, and the American Pharmaceutical Association should ally itself with the American Medicinal Association to begin the crusade.

Mr. Roemer's paper was received with an expression of thanks. But the matter was not allowed so to be closed. Secretary Craig deprecated the continued indication of a side-stepping policy and advocated some definite declaration in the matter, that would show that the Branch recognized the need for reform and was in favor of reformative action. Mr. Army supported Mr. Craig, condemning in no uncertain terms the impertinence and boldness of dispensing physicians. Messrs. McElhenie and Berger also spoke upon the subject. And the following motion was adopted:

It is the opinion of the New York Branch of the American Pharmaceutical Association that there is a crying need for reform in the matter of the exemption of dispensing physicians and the drugs they dispense, from the

provisions of the state laws relating to the practice of pharmacy; and the Branch is further of the opinion that the American Pharmaceutical Association should give to the question of such reform, earnest consideration.

Adjournment was taken at 10:50 o'clock.
HUGH CRAIG, Secretary.

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NEW ENGLAND BRANCH.

A regular meeting was held at Hotel Nottingham, Boston, on Wednesday evening, March 19. There were about fifty present.

President Henry A. Eastabrook invited Mr. J. G. Godding to outline the plans for an Association home, which he did, the Branch then voting to endorse the movement to establish such a home where the property of the Association can be properly cared for.

The speaker of the evening was George C. Frolich, Ph. G., on "Biologicals and the Retail Pharmacist."

Mr. Frolich, an expert actively engaged in the distribution of biological products now and for many years past, made a really remarkable address on the manufacture, use and sale of these products. While necessarily technical to a great extent, his remarks on the storing and handling of serums and vaccines were sufficiently practical for anyone and the profits to be derived by following his advice are certainly going to be large.

A short time was devoted to the organo products, such as Thyroid, Suprarenal and Pituitary extracts.

An exhibition of commercial antitoxines and vaccines was placed at the disposal of those who cared to examine them, and many grasped the opportunity to do so.

R. ALBRO NEWTON, Secretary.

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NASHVILLE BRANCH.

The Nashville Branch of the American Pharmaceutical Association held its regular meeting in Furman hall Thursday afternoon, March 13, with President J. O. Burge in the chair.

W. R. White, of the membership committee, reported the approval by Secretary J. H. Beal of the plans of the committee to begin a campaign of the Southern states for new members and the awarding of the contract

to a local firm for the printing of the literature to be sent out.

Dr. E. A. Ruddiman, chairman of the general entertainment committee, read many letters from pharmacists throughout the state accepting appointment on the committee and pledging their best services in helping to entertain the American Pharmaceutical Association, which meets here in August. He requests that the chairmen of the special committees report the names of their full committees to him as soon as possible.

The aid of all druggists in the city is solicited in preparing to entertain this great body of pharmacists, whether they are members of the Association or not.

A novel combination badge and watch fob with a picture of the Hermitage on a pendant was proposed to give to attending delegates and was referred to the badge committee.

A publicity committee will be appointed to boost Nashville in each of the drug journals.

A communication from the German Apothecaries' Association of New York was received, announcing an European trip which the association will give to pharmacists of this country next year. All of the great manufacturing industries of the old country will be visited.

Dr. J. O. Burge was appointed chairman of a local committee to work up interest in the trip at the Association meeting here in August.

The Branch then adjourned to meet again April 10.

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CINCINNATI BRANCH.

The first meeting of the Cincinnati Branch of the American Pharmaceutical Association was held at Lloyd's Library, West Court street, March 18. A large and enthusiastic membership and friends greeted Chairman Theo. D. Wetterstroem, who at once opened the meeting by requesting Temporary Secretary C. A. Apmeyer to read the minutes of the preliminary meeting held February 11, which being done, said proceedings were readily adopted by all members present.

The report of the Committee on Organization was presented by Mr. Frank H. Freericks in a very masterly manner. He submitted a type written copy of the Preamble, Constitution and By-Laws, which were adopted by the members, after voting on each article and section and finally ratifying same as a whole.

The report of the Committee on Nominations was submitted by Chairman Edw. Voss Jr., and resulted in the election of the following officers, to serve to May, 1914:

President, Prof. John U. Lloyd.

First Vice-President, Theo. D. Wetterstroem.

Second Vice-President, Fred W. Weissmann.

Treasurer, Fred S. Koppe.

Secretary, Chas. A. Apmeyer.

Executive Committee, three years, Chas. T. P. Fennel; two years, Chas. G. Merrell; one year, Dr. A. O. Zwick.

The installation of officers followed, during which each newly elected officer responded heartily and pledged himself to further the interests not alone of the babe newly born but also of the parent body.

The next meeting will be held April 8, 1913, and the Program Committee promises some real treats.

CHAS. A. APMEYER, Sec'y.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.

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MRS. FREDERICK W. MEISSNER.

Mrs. Frederick W. Meissner died of uraemic poisoning at LaPorte, Ind., on February 28, 1913. Her maiden name was Alice G. Clement, and she was born at Rising Sun, Ohio county, Indiana, on September 12, 1861. Her marriage to Frederick W. Meissner took place in December 2, 1891. She had four children—Clement F., Roger M., Virginia N. and Frederick W.

Mrs. Meissner was a gentle home-woman, finding life's happiness greatest in loving devotion to her family, and yet interested, also, in fraternal and social work. The sympathies of the members of the American Pharmaceutical Association will go out in fullest measure to their fellow member—Frederick W. Meissner, in his bereavement.

RICHARD FROHWEIN.

Richard Frohwein, the oldest pharmacist of Elizabeth, N. J., died on January 18, 1913. He was born in 1831 at Atzmansdorf, Germany, and came to America in 1854. He received his early training in pharmacy in his native land; he opened a drug store in Elizabeth, on Fulton street, near First; two years later he moved to Marshall street, and seven years still later, he bought the drug store of Dr. T. L. Hough, 122 First street, which he conducted until two years ago. Mr. Frohwein was an honorary member of the College of Pharmacy of the City of New York, and one of the founders of the New Jersey Pharmaceutical Association. He joined the American Pharmaceutical Association in 1867. Mr. Frohwein was prominent in public affairs. He was secretary and treasurer of the Elizabeth Savings Bank, postmaster of the first substation of his city, and a member of the Board of Health of Elizabeth. Three sons, all pharmacists, two daughters, five grand children, and one great-grandchild survive him. J. W. E.

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LOUIS LEHMAN.

Louis Lehman, of Chicago, Ill., died on January 6, 1913. He was one of the incorporators and first trustees of the Chicago Retail Druggists' Association, and for a time secretary of the latter organization. He became a member of the American Pharmaceutical Association in 1905. J. W. E.

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WILLIAM W. GOODWIN.

William W. Goodwin, aged ninety-six years, died at Newburyport, Mass., on February 13, 1913. He was a native of Hartford, Conn., and went to Boston in 1840 to become a member of the Theodore Metcalf Company, with which he remained until his retirement several years ago. He has been a member of the American Pharmaceutical Association since 1853. He is survived by his wife. J. W. E.

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PROF. OSCAR OLDBERG.

DALLAS, TEX., March 3, 1913.

Death always comes unexpectedly and, though we knew that death had touched the generous heart of Dr. Oldberg some years ago and that he had then begun to die, we

were truly saddened if not shocked to hear the news of his demise.

Having been called upon to preside in place of Dr. Oldberg at the Los Angeles meeting of the A. Ph. A., a friendly interest developed on my part, because of an anxiety to represent as well as it was possible, one so much better qualified.

There was much sadness in the latter years of Dr. Oldberg's life, induced by sickness, but with it all he sustained his deserved reputation as pharmacist and teacher, a man of unsullied honor and commendable fortitude. It may well be said of him, he was faithful and loyal to the end. Only a few months ago he delivered his last message to pharmacists through the work which was to be his last. Doubtless much of it done in pain by the patient, feeble sufferer, so that he might instruct; the last offering in the interest of pharmacists. Such a work has an added value and becomes a treasure, every page consecrated by sufferings, weariness and devotion, the record of many long, sad and hopeless hours.

As the splendors of the sun linger in the West even after his setting, and the influence of his powers have been contributed to living things, so also, the memory of Dr. Oldberg will remain with those who knew him best, and the lessons he conveyed to others will continue influential in the lives of many pharmacists whose activities have a part in the development of pharmacy.

"I'ta mortuorum in memoria vivorum est posita."

E. G. EBERLE.

—

PHILADELPHIA, March 4, 1913.

A life of unceasing toil dedicated to pharmacy and since 1911, when he suffered from a paralytic stroke, bravely waiting for the summons home. Professor Oldberg was a marvel for work; he had an analytical and at the same time a constructive mind, and his Swedish ancestry was probably responsible for his persistent industry. When he took up a subject he would not give up until he had exhausted its possibilities; he was a born teacher who loved to communicate. His language was clear and forceful; he was a man of ideas and an original thinker. He knew how to marshal facts and as a special pleader he was one of the best I have every known; to those who differed from him, and he did not court approval, he was a man

to be reckoned with. His intellect was keen and his reasoning close and his students universally praise his work. While not always tolerant towards those who opposed him, he nevertheless harbored few resentments. He had a scientific mind and the habit of order, and any one who will read his contributions to American pharmacy, which have been of the highest order, will realize that he was a trained observer of facts and that he knew how to present them; one was never left in doubt as to Professor Oldberg's meaning, whether he was engaged in writing textbooks, preparing a brochure for the American Pharmaceutical Association, or presiding over a convention; he always presented his thoughts in a clear, incisive manner. He will be greatly missed and, though he has gone home to rest, his works are his monument. Honest and true, just and faithful to his university and to the true interests of pharmacy, Oscar Oldberg will be remembered in the future as one who served to the best of his ability his fellow men in all of life's activities.

J. P. REMINGTON.

CAMPDEN, N. J., March 11, 1913.

There has passed away another of the "old guard" who have so faithfully and so unselfishly labored in behalf of American pharmacy. Former president of the American Pharmaceutical Association Oscar Oldberg was claimed by death at Pasadena, Cal., on February 27. Another gentle, lovable spirit has "crossed the bar." With the news of his decease comes that inexplicable sorrow and keen sense of the loss that our Association has sustained. Another link in that intangible and unseen chain that binds us in fellowship here has been broken asunder.

Words of tribute from his associates and friends are appropriate and timely, and I beg the privilege of adding my wreath of a few sentences, fully realizing as I pen the words how inadequately they express the sentiments in my heart.

Dr. Oscar Oldberg was characterized by a personality that was agreeable and inviting, a mien that was dignified yet pleasing, a spirit that was kind, mild and lovable yet sagacious. His words demonstrated the uprightness of his thoughts and his utterances were always heeded as expressions of wisdom resulting from thoughtful deliberation of a

mind schooled in inward debate and study. He contended for principles that in his judgment meant the upbuilding and advancement of pharmacy.

He was a faithful and conscientious teacher and leader. A persistent and consistent writer whose contributions were dignified and thoughtful presentation of facts and views plainly expressed and in an excellent style. An author of acknowledged merit whose works will serve for more than the present time and generation.

Dr. Oldberg was one whom we were proud to call our friend; a man among men. A giant among intellectual giants, who always bore himself properly and acquitted himself creditably. His influence was impressed indelibly upon pharmacy. As pharmacists and as friends, we mourn his loss; we honor him and shall always cherish his memory.

GEORGE M. BERINGER.

RESOLUTIONS ADOPTED BY THE CHICAGO BRANCH A. P. A.

WHEREAS, The members of the Chicago Branch have learned with deep sorrow of the death of Professor Oscar Oldberg, who was an ex-president of the Association as well as the first president of the Branch, and for many years one of its most active leaders; and,

WHEREAS, Professor Oldberg was a pharmacist and educator of more than national reputation and a courageous leader who strove with constancy for the attainment of high ideals for American pharmacy; be it

Resolved, That in the death of Oscar Oldberg the pharmacists of America and the members of the Chicago Branch in particular, have lost a powerful champion, a courageous leader and a true friend whose precepts and example will long remain and will hold before us nobler ideals and encourage us to higher aims; and be it further

Resolved, That we, the members of the Chicago Branch, do express our admiration of the character of Oscar Oldberg and our deep sorrow in his loss, and that we offer our sincere sympathy and condolence to the members of the bereaved family. Be it further

Resolved, That a copy of these resolutions be spread upon the minutes of the Branch and copies be sent to the pharmaceutical press.

IN MEMORY OF THOMAS PENROSE COOK.

Born March 26, 1819; died January 7, 1913.

Resolutions adopted by the New York Branch of the American Pharmaceutical Association at a meeting held on March 10, 1913:

WHEREAS, Thomas Penrose Cook faithfully served the profession of pharmacy throughout the whole of his adult life; and

WHEREAS, He was for thirty-five years an active member of the American Pharmaceutical Association, serving as a most efficient local secretary during the meeting held in New York; and

WHEREAS, He has been a member of the New York Branch of the Association since its organization, and has done valuable service as chairman of the committee on legislation; therefore, be it

Resolved, By the New York Branch of the American Pharmaceutical Association, that his death is deeply deplored by the organization as removing from its ranks one of its most valued and active members and one of the most highly esteemed and popular officers. Be it further

Resolved, That the officers of the Branch be requested to forward to the family of Mr. Cook a copy of these resolutions as evidence of the warm regard in which he was held by the members of the Branch, and of the sincere sympathy which they feel for his family in their loss.

CASWELL A. MAYO,
OTTO RAUBENHEIMER,
HUGH CRAIG,
Committee.

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IN MEMORY OF EWEN McINTYRE.

Born January 18, 1827; died January 8, 1913.

Resolutions adopted by the New York Branch of the American Pharmaceutical Association, at a meeting held at the New York College of Pharmacy on Monday evening, March 10:

WHEREAS, The observations and experiments of the late Ewen McIntyre regarding the adulteration of imported chemicals were responsible for the formation of the American Pharmaceutical Association and for the enactment of laws prohibiting the importation of adulterated drugs and chemicals; and

WHEREAS, Throughout his long, busy and useful life he devoted a large portion of his time to the elevation of his calling through education and association work; and

WHEREAS, His frank, cordial and kindly manner had won for him the love, esteem and affection of pharmacists all over the United States; therefore, be it

Resolved, By the New York Branch of the American Pharmaceutical Association, that a page in the minutes of the Branch be set aside to commemorate his services to pharmacy and as a token of the affectionate regard in which he was held by his fellow members of the Branch; and be it further

Resolved, That the officers of the Branch be instructed to send a copy of these resolutions to the family of Mr. McIntyre as evidence of the sympathy which the members feel for them in their irreparable loss.

CASWELL A. MAYO,
OTTO RAUBENHEIMER,
HUGH CRAIG,
Committee.

THE CREAM OF BUSINESS.

Discounts are pure cream of business. All other profits we earn, some many times over; but discounts are easy money. If dealers were to try half as hard to take discounts as to sell goods, the balance of profits in their favor would rapidly increase.

Discounting bills is a habit (and a good habit) and once formed a man will try as hard to meet the terms of discount as he would the terms of his bills. What is the result? The whole business feels the effect of the method in prompt collections, conservative credit, conservative personal expense.

Try this plan: Make a firm resolve to discount your bills. It may take you two or three years to be able to do so in all cases, but you will be amply repaid in the remaining years of your business career.—*The Apothecary*.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,

From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.



REUM, ARTHUR W.,

From Box 643 Klamath Falls, Oregon,
To 1124 Gough St., San Francisco, Cal.

BROWN, B. A.,

From 711 Bell St., Seattle, Wash.,
To 4730 Latona St., Seattle, Wash.

KNAPP, GUS,

From Laguna, P. I.,
To 40 Garrison Lane, Baltimore, Md.

ECKLER, CHAS. R.,

From 432 E. St. Clair Ave.,
To 335 Northern Ave., Indianapolis, Ind.

HUGILL, RAY,

From Detroit, Mich.,
To Cheboygan, Mich.

MOYER, A. E.,

From Detroit, Mich.,
To Erie, Mich.

PHARES, WALTER L.,

From Rock Island Arsenal, Rock Island, Ill.,
To care Chief Surgeon, Philippine Div., Manila, P. I.

SMITH, WM. H.,

From Yonkers, N. Y.,
To Desmond Ave., Bronxville, N. Y.

WATSON, E. T.,

From Rule, Texas,
To Newcastle, Pa.

BERKOWITZ, MORRIS R.,

From Chelsea, Mass.,
To residence unknown.

BLANCHE, ROBERT H.,

From Philadelphia, Pa.,
To residence unknown.

BALLOU, CLARENCE O.,

From 8th and 17th Sts., Boise, Idaho,
To 9th and Idaho, Boise, Idaho.

COLEMAN, GEO. E.,

From 607 Washington St., Dorchester Center, Mass.,
To 21 Aspinwall Road, Dorchester Center, Mass.

Fonteyne, Gustave,

From Ft. Wint, P. I.,
To Ft. McKinley, P. I.

YOUNG, DR. HARRY G.,

From 7937 Madeira St., Pittsburgh, Pa.,
To Forest and Birmingham Aves., Avalon, Pa.

ALBERTS, LEE,

From Lowell, Indiana,
To Kewanee, Wisconsin

RIESS, H. W., Sgt. H. C., U. S. A.,

From Ft. Wayne, Mich.,
To C. S. O., 2d Div., Texas City, Tex.

STEPHENSON, JOHN J.,

From 1880 Lexington Ave., New York, N. Y.,
To 2140 Jamaica Ave., Richmond Hill, Long Island, N. Y.

ROE, J. N.,

From College and Locust Sts., Valparaiso, Ind.,
To 706 S. Lincoln St., Chicago, Ill.

THE EXCEPTIONAL EMPLOYEE.

Mr. Carnegie says: "The most valuable acquisition to his business that an employer can obtain is an exceptional young man. There is no bargain so fruitful."

By the exceptional young man Mr. Carnegie means the one who is always looking out for his employer's interests, the young man who keeps his eyes open, who is always trying to make suggestions for improvements in the business, who is always studying for some better, simpler, more efficient way of doing things.

Never before was there such a demand for the exceptional, the resourceful man, the man who can think, who can devise new and original ways of doing things, the man who can grasp the needs of the situation and solve them with his own resourcefulness.

Napoleon said that his soldiers fought so well because every man carried a field marshal's baton in his knapsack. In other words, every man in Napoleon's army *expected advancement and was prepared for it.*

The principle of advancement, of growth, of progress, is the same whether in employer

or employe. Business grows because of enterprising, progressive, pushing, up-to-date methods. Promotion for the employe requires the same pushing, vigorous, alert methods.

If you want to be advanced, you must be dead-in-earnest and enthusiastic over your employer's business. You must go to the

bottom of it; study it, just as much about it as possible. If you intend to take up the same line of business yourself, your present opportunity of observation and study will be of untold value to you. At present, you are really an apprentice, being well paid for your work, besides having the opportunity to learn the business.—*Orison Swett Marden.*

DOES NOT KNOW WHAT HE IS LOSING.

A man can be a good citizen and a good druggist without being a member of his state and national pharmaceutical associations, and in spite of denying himself the privilege of attending their meetings, but, by doing so he is missing the one thing needed to round out his higher professional life and to make his day's work a thing of pleasure and satisfaction instead of year round drudgery. There is nothing that will benefit a man in all ways more than the direct personal, friendly contact with other men interested in the same problems and the same ways of making a livelihood as himself, and this is what makes attendance at one's state or at the American Pharmaceutical Association meetings worth while. A man can read the papers contributed by fellow members at his leisure and can study them to better advantage than, but he misses the personal comment, criticism and discussion of other men that often make the paper a living thing and through which he might get just the suggestion he needed for solving some difficult problem of his own. The greatest value of association meetings does not lie in the formal sessions but in the impromptu gatherings of men from different sections and with different experiences, where real personal experiences are told and problems are discussed in a practical way. Ask any man who attends association meetings what feature of the meetings is most profitable and pleasurable to him and he will answer at once, "Meeting other men and swapping experiences."

This is the most valuable feature of all meetings of men associated together for a common purpose and it is one of those intangible things that must be experienced to be valued. The druggist who never attends the meetings of his state association does not know what he is losing; the druggist who does not attend at least one meeting of the American Pharmaceutical Association is an undeveloped as the man who lived at the seashore but who never took a bath, because he did not believe he needed washing. It is not the attendance at formal sessions and attentive discussion of papers and motions that make the meetings pay, it is the real privilege of personal contact with other members, with other men who have ideas and ways of doing things that they are glad and willing to tell others, the broadening of one's mental horizon by such intimate conversation, the realization that even the druggist's life has ideals and men who are striving to make these ideals actualities. Does it pay to meet the men in actual friendly conversation who have been but names in textbooks before? Ask any younger member of your state association, or better yet, a young member of the two great national associations, if he does not think himself well repaid for his time and expense by the friendships formed with older men and by the encouragement received from men whose names are famous in pharmacy and science.—*American Druggist.*

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Volume II

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

FLOOD DAMAGE TO OHIO AND INDIANA DRUGGISTS.

DURING the month of March much of the territory of central and southern Ohio, and an extensive section of Indiana, were swept by the most disastrous floods in the history of these sections.

The inhabitants of these regions had so long escaped disasters of this kind that they had come to regard their sections as safe against the destructive storms and floods which from time to time had visited other states, but the record of March proves this sense of security to have been ill founded.

The section of Ohio mainly affected is a moderately elevated plateau, and seemed to be especially well situated to escape extensive damage from floods. The streams are numerous, and are ordinarily well behaved, carrying off the waters of the annual spring freshets with no greater expansion than could be accommodated by the ample "bottoms" which form their ordinary flood grounds. These, however, proved entirely inadequate to carry the flood of water suddenly poured into them. Following an unprecedented rainfall, valleys two to four miles wide, which apparently had not been filled with water since the melting of the ancient glaciers, became within a few hours rivers of rushing waters, lifting houses and barns from their foundations and hurling them against bridges of steel and concrete, which crumpled up like rotten wood under the impact, while railway embankments that had stood for half a century dissolved and disappeared like snow drifts.

Towns and districts located high above the level of recorded floods were inundated. The lighter and less substantial buildings were twisted from their

foundations and hurled against the more substantial buildings of brick and cement, until these, too, gave way, leaving on recession of the flood a tangled mass of wreckage, consisting of broken timbers, pianos, automobiles, railroad freight cars, household goods, stocks of vegetable stalls and dry goods stores, and the bodies of human victims, horses and cattle, thickly covered with mud. In some places whole rows of well built cottage homes were completely swept away, leaving their sites a series of irregular depressions like an emptied river bed. In some places the soil of fertile fields was carried away, down to the untillable clay beneath, while in other places it was left covered by a thick layer of coarse gravel and river boulders.

During approximately thirty-six hours the rainfall amounted to one-third, or more, of the annual average precipitation. The cleared hills and their slopes permitted the water to run off almost as fast as it fell, and the well drained fields of the lower grounds carried the water directly to the small streams into which they emptied. The sewer systems of the villages and towns likewise hurried the waters which they collected into the creeks and rivers, the consequence being that the bulk of the rainfall reached the streams within a few hours after its precipitation, whereas a hundred years ago it would have been largely absorbed by the soil upon which it fell, and would have escaped by slow seepage, distributed over weeks and months.

The alleged narrowing of the river channels by the dumping of waste into them, which has been given as one of the causes of the damage, in reality played but a minor part. A more important factor, perhaps, was the frequent narrowing of the river channels by the approaches and abutments of railroad and other bridges. The part played by both of these, however, was insignificant. Even if the channels had been of their original width at all points they could not have carried off the enormous volume of water that was poured into them in the short space of time, and it is not easy to imagine any system of impounding basins or of levees that would have been sufficient to have restrained the floods from destructive results.

It has been estimated by competent hydrographic authorities that a basin of not less than eighteen hundred square miles in area and twenty-five feet deep would have been required to contain the total precipitation, a work that would seem to be almost beyond the range of possibility.

That the loss of life was at first overestimated was due mainly to the breaking of all lines of communication between inhabited centers. When it was perceived that villages and resident districts were largely under water, or the buildings swept away, and their inhabitants could not be heard from it was assumed that they had perished. The loss of life, however, was far too great, even though much less than at first reported. The property loss will never be correctly estimated. In portions of some communities the accumulations of half a century have been entirely swept away.

A prominent jobber in central Ohio estimates the number of retail druggists who were more or less injured by the floods at two hundred, of which about one hundred and twenty-five had their stocks and stores, and sometimes their homes, either very greatly damaged, or practically destroyed. As soon as communications were reopened and the extent of the damage became known, offers of as-

sistance to the damaged druggists were abundant. Manufacturing houses very largely sent notice of their intention to replace the damaged or destroyed stocks with new material; jobbers gave notice of their intention to extend the period of credit, and to aid in other ways, while various Pharmaceutical Associations began the collection of funds to be loaned to druggists in the injured districts to enable them to resume business. It is stated that the druggists of San Francisco and vicinity, remembering the manner in which the druggists of the East came to their aid following the great San Francisco fire, have contributed something like fifty thousand dollars to be loaned to the flood-damaged druggists.

Most of the railways affected have been able to resume traffic over temporary bridges and trestle-work, though with some the damage was so extensive that considerable stretches of their lines are still out of commission. The business houses in most cases have already reopened with new stock of goods, or are preparing to do so at an early date. Everywhere in the damaged districts the people are bearing their misfortunes bravely, and are starting in to restore their ruined homes and fortunes. In this work all will wish them success, and many will be glad to assist.

J. H. BEAL.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

VARIATION IN THE SUSCEPTIBILITY OF THE GUINEA PIG TO THE HEART TONIC GROUP.

(Second Paper.)

CHAS. E. VANDERKLEED, PHAR. D., COLLINGSWOOD, N. J., AND PAUL S. FITTENGGER, PHAR. D., PHILADELPHIA, PA.

In a paper read at the 1911 meeting of the American Pharmaceutical Association in Boston, one of us outlined a plan for a series of experiments to cover a period of one year, during which time the susceptibility to Ouabain poisoning of guinea pigs, male and female, large and small, might be observed. During the year which has elapsed since that meeting, this set of experiments has been carried out, following the plan outlined in the former paper just as closely as it was possible to do so.

As stated in the first paper, the experimental pigs were divided into four classes, males large and small, and females large and small. All were fed alike on oats, hay and seasonable greens, as previous experience had demonstrated that pigs cannot thrive on greens alone. All were housed alike, being brought in from their country quarters in groups of fifty to one hundred, and kept in specially provided quarters in the laboratory for one to two weeks before using for the tests.

The test substance used was Merck's Crystallized Strophanthin, Thoms (Ouabain), a fresh solution from the same sample being prepared for each series of injections, in order to obviate as far as possible any deterioration of the material.

The following tables show in detail the results of the tests month by month. The doses are in all cases those given per 250 gram weight:

JULY, 1911.

Temperature of Laboratory 25 to 29° C. Aver. 27°C.

Small Males, 140 to 210 gms.			Large Males, 270 to 410 gms.		
Dose		Results	Dose		Results
0.0000100.....	—	Recovered	0.0000375.....	—	Recovered
0.0000110.....	—	Recovered	0.0000400.....	—	Recovered
0.0000170.....	—	Recovered	0.0000410.....	—	Recovered
0.0000500.....	—	Recovered	0.0000470.....	—	Recovered
0.0000500.....	—	Recovered	0.0000470.....	+	Died*
x0.0000525.....	+	Died	0.0000500.....	—	Recovered
0.0000550.....	+	Died	0.0000500.....	—	Recovered
0.0000575.....	+	Died	x0.0000525.....	+	Died
0.0000600.....	+	Died	0.0000550.....	+	Died
0.0000600.....	+	Died	0.0000600.....	+	Died
0.0000690.....	+	Died			
0.0000720.....	+	Died			
M. L. D.=0.0000525.			M. L. D.=0.0000525.		

*Died "out of order."

Small Females, 160 to 210 gms.		Large Females, 260 to 350 gms.	
Dose	Results	Dose	Results
0.0000100.....	— Recovered	0.0000375.....	— Recovered
0.0000110.....	— Recovered	0.0000400.....	— Recovered
0.0000110.....	— Recovered	0.0000400.....	— Recovered
0.0000170.....	— Recovered	0.0000410.....	— Recovered
0.0000170.....	— Recovered	0.0000410.....	— Recovered
0.0000500.....	— Recovered	0.0000470.....	— Recovered
0.0000500.....	— Died	0.0000470.....	— Recovered
x0.0000525.....	+ Died	x0.0000500.....	+ Died
0.0000550.....	+ Died	0.0000500.....	+ Died
0.0000575.....	+ Died	0.0000525.....	+ Died
0.0000600.....	+ Died	0.0000500.....	+ Died
M. L. D.=0.0000525.		M. L. D. 0.0000500.	

AUGUST, 1911.

Temperature of Laboratory 25 to 29° C. Aver. 27° C.

Small Males, 130 to 210 gms.		Large Males, 270 to 410 gms.	
Dose	Results	Dose	Results
0.000010.....	— Recovered	0.000040.....	— Recovered
0.000014.....	— Recovered	0.000041.....	— Recovered
0.000017.....	— Recovered	0.000047.....	— Recovered
0.000050.....	— Recovered	0.000050.....	— Recovered
x0.0000525.....	+ Died	x0.0000525.....	+ Died
0.000055.....	+ Died	0.000055.....	+ Died
0.0000575.....	+ Died		
M. L. D. 0.0000525.		M. L. D. 0.0000525.	

Small Females, 160 to 210 gms.		Large Females, 260 to 345 gms.	
Dose	Results	Dose	Results
0.000010.....	— Recovered	0.000040.....	— Recovered
0.000044.....	— Recovered	0.000044.....	— Recovered
0.000047.....	— Recovered	0.000047.....	— Recovered
0.000050.....	— Recovered	x0.000050.....	+ Died
x0.0000525.....	+ Died	0.000050.....	+ Died
0.0000550.....	+ Died	0.0000525.....	+ Died
0.0000575.....	+ Died		
M. L. D. 0.0000525.		M. L. D. 0.000050.	

SEPTEMBER, 1911.

Temperature of Laboratory 20 to 27° C. Aver. 23.5° C.

Small Males, 105-215 gms.		Large Males, 240 to 320 gms.	
Dose	Results	Dose	Results
0.000045.....	— Recovered	0.000045.....	— Recovered
0.000047.....	— Recovered	0.000047.....	— Recovered
0.000050.....	— Recovered	0.000050.....	— Recovered
0.000050.....	— Recovered	0.000050.....	— Recovered
0.000050.....	+ Died	x0.0000525.....	+ Died
x0.0000525.....	+ Died	0.0000525.....	+ Died
0.0000525.....	+ Died	0.000054.....	+ Died
0.000054.....	+ Died	0.000058.....	+ Died
0.000058.....	+ Died	0.000062.....	+ Died
0.000062.....	+ Died		
M. L. D. 0.0000525.		M. L. D. 0.0000525.	

Small Females, 195 to 245 gms.		Large Females, 230 to 295 gms.	
Dose	Results	Dose	Results
0.000044.....	— Recovered	0.000037.....	— Recovered
0.000047.....	— Recovered	0.000040.....	— Recovered
0.000050.....	— Recovered	0.000044.....	— Recovered
0.000050.....	— Recovered	0.000044.....	— Recovered
0.000050.....	— Died	0.000044.....	— Recovered
x0.0000525.....	+ Died	x0.000047.....	+ Died
0.0000525.....	+ Died	0.000047.....	+ Died
0.000054.....	+ Died	0.000047.....	+ Died
0.000058.....	+ Died	0.000050.....	+ Died
		0.0000525.....	+ Died
M. L. D. 0.0000525.		M. L. D. 0.000047.	

OCTOBER, 1911.

Temperature of Laboratory 18 to 24.5° C. Aver. 21.25° C.

Small Males, 190 to 325 gms.		Large Males, 465 to 745 gms.	
Dose	Results	Dose	Results
0.000017.....	— Recovered	0.000047.....	— Recovered
0.000050.....	— Recovered	0.000047.....	— Recovered
0.0000525.....	— Recovered	0.000050.....	— Very sick
0.000057.....	— Recovered		recovered
0.000057.....	— Recovered	0.000050.....	— Very sick
0.000060.....	— Very sick		recovered
x0.000060.....	+ Died	0.000050.....	+ Died*
0.000060.....	+ Died	0.0000525.....	— Very sick
0.0000625.....	+ Died		recovered
		x0.0000525.....	+ Died
		0.0000525.....	+ Died
		0.000055.....	+ Died
		0.0000575.....	+ Died
		0.000060.....	+ Died
M. L. D. 0.000060.		M. L. D. 0.0000525.	

*Died "out of order."

Small Females, 225 to 310 gms.

Dose	Results
0.000045	— Recovered
0.000047	— Recovered
0.000047	— Recovered
0.000047	+ Died*
0.000050	— Recovered
0.0000525	— Very sick— recovered
0.0000525	— Very sick— recovered
0.0000525	+ Died
x0.000055	+ Died
0.000057	+ Died
0.000057	+ Died
0.000059	+ Died
0.000060	+ Died

M. L. D.=0.000055.

Large Females, 370 to 705 gms.

Dose	Results
0.0000325	— Recovered
0.0000375	— Recovered
0.000040	— Recovered
0.000040	— Recovered
0.000040	— Very sick— recovered
0.000044	— Very sick— recovered
0.000044	— Very sick— recovered
0.000017	— Very sick— recovered
0.000050	— Very sick— recovered
x0.000050	+ Died
0.000050	+ Died
0.000052	+ Died
0.000055	+ Died
0.000057	+ Died

M. L. D.=0.000050.

NOVEMBER, 1911.

Temperature of laboratory, 20 to 24° C. Aver., 22° C.

Small Males, 175 to 320 gms.

Dose	Results
0.000045	— Recovered
0.000047	— Recovered
0.000050	+ Died*
0.000055	— Recovered
0.000055	— Recovered
x0.000057	+ Died
0.000057	+ Died
0.000057	+ Died
0.000060	+ Died
0.000065	— Recovered*
0.000070	+ Died
0.000070	+ Died
0.0000725	+ Died
0.0000725	+ Died

M. L. D.=0.000057.

Large Males, 410 to 670 gms.

Dose	Results
0.000050	— Recovered
0.000055	— Recovered
0.000057	— Recovered
0.000057	+ Died
x0.000060	+ Died
0.000060	+ Died
0.0000625	+ Died
0.000065	+ Died

M. L. D.=0.000060.

Small Females, 165 to 395 gms.

Dose	Results
0.000050	— Recovered
0.0000525	— Recovered
0.000055	— Recovered
0.000055	— Recovered
x0.000057	+ Died
0.000057	+ Died
0.000060	+ Died
0.0000625	+ Died
0.000065	+ Died
0.000067	+ Died

M. L. D.=0.00005

Large Females, 380 to 610 gms.

Dose	Results
0.000050	— Recovered
0.0000525	— Recovered
0.0000525	— Recovered
0.0000525	+ Died*
0.000055	— Recovered
0.000055	— Recovered
x0.000057	+ Died
0.000057	+ Died
0.000057	+ Died
0.000060	+ Died
0.000065	+ Died

M. L. D.=0.000057.

DECEMBER, 1911.

Temperature of laboratory, 14 to 23° C. Aver., 18.5° C.

Small Males, 160 to 290 gms.

Dose	Results
0.000055	— Recovered
0.0000575	— Recovered
0.000060	— Recovered
0.000065	— Recovered
0.0000675	— Recovered
0.000070	— Recovered
x0.000070	+ Died
0.000070	+ Died
0.0000725	+ Died
0.000075	+ Died
0.000080	+ Died
0.000087	+ Died
0.000090	+ Died
0.000094	+ Died

M. L. D.=0.000070.

Large Males, 350 to 495 gms.

Dose	Results
0.000040	— Recovered
0.000043	— Recovered
0.000045	— Recovered
0.000047	— Recovered
0.000055	— Recovered
0.000060	— Recovered
0.0000625	— Recovered
0.000065	— Recovered
0.0000675	— Recovered
0.000070	— Recovered
x0.000070	+ Died
0.000070	+ Died
0.000070	+ Died
0.000075	+ Died
0.000080	+ Died
0.000084	+ Died
0.000087	+ Died
0.000090	+ Died

M. L. D.=0.000070.

* Died or recovered "out of order."

Small Females, 175 to 290 gms.		Large Females, 275 to 395 gms.	
Dose	Results	Dose	Results
0.000055	— Recovered	0.000060	Recovered
0.000060	+ Died*	0.000065	Recovered
0.000065	— Recovered	0.000065	+ Died*
0.000065	— Recovered	0.0000675	Recovered
0.0000675	— Recovered	x0.000070	+ Died
0.0000675	— Recovered	0.000070	+ Died
0.0000675	+ Died	0.000075	+ Died
x0.000070	+ Died	0.000080	+ Died
0.000070	+ Died	0.000081	+ Died
0.0000725	+ Died		
0.000075	+ Died		
0.000080	+ Died		
0.000080	+ Died		
0.000087	+ Died		

M. L. D.=0.000070.

M. L. D.=0.000070.

JANUARY, 1912.

Temperature of laboratory, 15 to 25° C. Aver., 20° C.

Temperature of guinea-pig quarters, 7 to 17° C. Aver., 12° C.

Small Males, 170 to 345 gms.		Large Males, 320 to 790 gms.	
Dose	Results	Dose	Results
0.000055	— Recovered	0.000075	— Recovered
0.000057	— Recovered	0.000060	— Recovered
0.000060	— Recovered	0.000060	— Recovered
0.000060	— Recovered	0.0000625	— Recovered
0.000060	— Recovered	x0.0000625	+ Died
0.000060	+ Died*	0.0000625	+ Died
0.0000625	— Recovered	0.000065	+ Died
x0.0000625	+ Died	0.000065	+ Died
0.0000625	+ Died	0.000065	Recovered*
0.000065	+ Died	0.0000675	+ Died
0.000065	+ Died	0.000070	+ Died
0.0000675	+ Died		

M. L. D.=0.0000625.

M. L. D.=0.0000625.

Small Females, 205 to 295 gms.

Dose	Results	Dose	Results
0.0000625	— Recovered	0.000070	— Recovered
0.000065	— Recovered	0.000070	— Recovered
0.000065	— Recovered	0.000070	+ Died
0.0000675	— Recovered	x0.0000725	+ Died
0.0000675	— Recovered	0.000075	+ Died
0.0000675	+ Died*	0.0000725	+ Died

M. L. D.=0.0000725.

FEBRUARY, 1912.

Temperature of laboratory, 15 to 22° C. Aver., 18.5° C.

Temperature of guinea-pig quarters, 8 to 16° C. Aver., 12° C.

Small Males, 210 to 360 gms.		Large Males, 320 to 615 gms.	
Dose	Results	Dose	Results
0.000045	— Recovered	0.000065	— Recovered
0.000060	— Recovered	0.000070	— Recovered
0.000060	— Recovered	0.000070	— Recovered
0.000060	— Recovered	0.000070	+ Died*
x0.000065	+ Died	0.000072	— Recovered
0.000065	+ Died	0.000075	— Recovered
0.000070	+ Died	0.000075	— Recovered
0.000070	— Recovered*	x0.000075	+ Died
0.000075	+ Died	0.000080	+ Died
0.000080	+ Died	0.000080	+ Died
		0.000085	+ Died
		0.000090	+ Died
		0.000092	+ Died
		0.000095	+ Died

M. L. D.=0.000065.

M. L. D.=0.000075.

* Died or recovered "out of order."

Small Females, 175 to 320 gms.

Dose	Results
0.000060	— Recovered
0.000065	— Recovered
0.000065	— Recovered
0.000070	— Recovered
0.000070	— Recovered
0.000070	+ Died*
0.000075	— Recovered
0.000075	— Recovered
0.000075	+ Died*
0.000075	— Recovered
0.000080	— Recovered
0.000080	— Recovered
0.0000825	— Recovered
0.0000825	+ Died*
0.000085	— Recovered
0.000085	+ Died
x0.000085	+ Died
0.000085	+ Died
0.000085	+ Died
0.0000875	+ Died
0.0000875	+ Died
0.0000875	— Recovered*
0.0000875	+ Died
0.000090	+ Died
0.000090	+ Died
0.000090	— Recovered*
0.000095	+ Died
0.000095	+ Died
0.000100	+ Died
M. L. D.=0.000085.	

Large Females, 280 to 410 gms.

Dose	Results
0.000060	— Recovered
0.000065	— Recovered
0.000065	— Recovered
0.000065	+ Died
0.000065	+ Died
x0.000070	+ Died
0.000070	+ Died
0.000075	+ Died
0.000080	— Recovered*
0.0000825	+ Died
0.000085	+ Died
0.000090	+ Died
0.000095	+ Died
M. L. D.=0.000070.	

MARCH, 1912.

Temperature of laboratory, 18 to 22° C. Aver., 20° C.

Temperature of guinea-pig quarters, 10 to 15° C. Aver., 12.5° C.

Small Males, 200 to 390 gms.

Dose	Results
0.000040	— Recovered
0.000050	— Recovered
0.000060	— Recovered
0.000080	— Recovered
0.0000825	— Recovered
0.0000825	— Recovered
0.000085	— Recovered
0.000085	— Recovered
0.000085	— Recovered
0.0000875	— Recovered
0.0000875	— Recovered
0.0000875	+ Died
x0.000090	+ Died
0.000090	+ Died
0.000090	— Recovered*
0.000095	+ Died
M. L. D.=0.000090.	

Large Males, 310 to 810 gms.

Dose	Results
0.000060	— Recovered
0.000065	— Recovered
0.0000675	— Recovered
0.000070	— Recovered
0.0000725	— Recovered
0.0000725	+ Died*
0.0000725	+ Died*
0.0000725	— Recovered
0.0000725	— Recovered
0.000075	— Recovered
0.000075	— Recovered
0.000075	— Recovered
0.000075	+ Died*
0.000075	— Recovered
0.0000775	— Recovered
0.0000775	+ Died
x0.000080	+ Died
0.000080	+ Died
0.0000825	+ Died
0.000085	+ Died
0.0000875	+ Died
M. L. D.=0.000080.	

Small Females, 215 to 355 gms.

Dose	Results
0.000060	— Recovered
0.000070	— Recovered
0.000080	— Recovered
0.0000825	— Recovered
0.0000825	— Recovered
0.0000825	+ Died
x0.000085	+ Died
0.000085	+ Died
0.000085	+ Died
0.0000875	— Recovered*
0.0000875	+ Died
0.000090	+ Died
M. L. D.=0.000085.	

Large Females, 265 to 485 gms.

Dose	Results
0.000055	— Recovered
0.000060	— Recovered
0.000065	+ Died*
0.0000675	+ Died*
0.0000675	— Recovered
0.000070	— Recovered
0.000070	+ Died*
0.0000725	— Recovered
x0.000075	+ Died
0.000075	+ Died
0.000075	+ Died
0.000080	+ Died
0.0000825	+ Died
0.000085	+ Died
0.0000875	+ Died
M. L. D.=0.000075.	

M. L. D.=0.000085.

M. L. D.=0.000075.

*Died or recovered "out of order."

APRIL, 1912.

Temperature of laboratory, 20 to 28° C. Aver., 24° C.

Temperature of guinea-pig quarters, 14 to 20° C. Aver., 17° C.

Small Males, 185 to 250 gms.

Large Males, 240 to 547 gm.

Dose	Results	Dose	Results
0.000070	— Recovered	0.000065	— Recovered
0.000075	— Recovered	0.000070	— Recovered
0.0000775	— Recovered	0.0000725	— Recovered
x0.000080	+ Died	0.000075	— Recovered
0.000080	+ Died	0.000075	— Recovered
0.0000825	+ Died	0.000075	— Died*
0.000085	+ Died	0.0000775	— Recovered
		0.0000775	— Recovered
		0.0000775	— Recovered
		0.000080	— Recovered
		0.000080	— Recovered
		0.000080	— Died*
		0.0000825	— Recovered
		x0.0000825	+ Died
		0.0000825	+ Died
		0.000085	+ Died
		0.000085	+ Died

M. L. D.=0.000080.

M. L. D.=0.0000825.

Small Females, 180 to 310 gms.

Dose	Results	Dose	Results
0.000070	— Recovered	0.0000775	— Died
0.0000725	— Recovered	0.000080	— Died
0.0000725	+ Died*	0.000080	+ Died
0.000075	— Recovered	0.0000825	+ Died
0.000075	— Recovered	0.000090	+ Died
x0.0000775	+ Died		

M. L. D.=0.0000775.

MAY-JUNE, 1912.

Temperature of laboratory, 23 to 28.5° C. Aver., 25.75° C.

Temperature of guinea-pig quarters, 22 to 29° C. Aver., 25.5° C.

Small Males, 195 to 305 gms.

Large Males, 265 to 375 gms.

Dose	Results	Dose	Results
0.000065	+ Died*	0.000065	— Recovered
0.000070	— Recovered	0.000065	— Recovered
0.000075	— Recovered	0.000067	— Recovered
0.000080	— Recovered	0.000070	— Recovered
0.000085	— Recovered	0.000070	— Died*
0.000090	— Recovered	0.0000725	— Recovered
0.000095	— Recovered	0.000075	— Recovered
x0.000095	+ Died	0.000075	+ Died*
0.000095	+ Died	0.000080	— Recovered
0.000100	+ Died	x0.0000825	+ Died
0.000100	+ Died	0.0000825	+ Died
0.000100	+ Died	0.000085	+ Died
		0.000090	+ Died

M. L. D.=0.000095.

M. L. D.=0.0000825.

Small Females, 210 to 350 gms.

Large Females, 265 to 375 gms.

Dose	Results	Dose	Results
0.000060	— Recovered	0.000065	— Recovered
0.000060	— Recovered	0.000067	— Recovered
0.0000625	— Recovered	0.000070	— Recovered
0.0000625	— Recovered	0.0000725	— Recovered
0.000065	— Recovered	0.000075	— Recovered
0.000065	— Recovered	0.000080	— Recovered
0.000070	— Recovered	0.000085	— Recovered
0.000070	— Recovered	x0.000085	+ Died
0.000070	+ Died*	0.000085	+ Died
0.0000725	— Recovered	0.0000875	+ Died
0.000075	— Recovered	0.000090	+ Died
x0.000075	+ Died		
0.000075	+ Died		
0.000080	+ Died		

M. L. D.=0.000075.

M. L. D.=0.000085.

* Died "out of order."

JULY, 1912.

Temperature of laboratory, 26 to 30° C. Aver., 28° C.

Temperature of guinea-pig quarters, 22 to 29° C. Aver., 25.5° C.

Small Males, 175 to 375 gms.

Large Males, 335 to 535 gms.

Dose	Results	Dose	Results
0.000040	— Recovered	0.000050	— Recovered
0.000050	— Recovered	0.000050	— Recovered
0.000060	— Recovered	0.000060	— Recovered
0.000065	+ Died	0.000065	— Recovered
x0.000065	+ Died	0.000065	— Recovered
0.000065	+ Died	x0.000070	+ Died
0.000070	+ Died	0.000070	+ Died
0.000070	+ Died	0.000080	+ Died
0.000075	— Recovered*	0.000085	+ Died
0.000080	+ Died	0.000090	+ Died
0.000085	+ Died	0.0000925	+ Died
0.000090	+ Died	0.000095	+ Died
0.0000925	+ Died	0.000100	+ Died
0.000095	+ Died		
0.000100	+ Died		

M. L. D.=0.000065.

M. L. D.=0.000070.

Small Females, 175 to 360 gms.

Large Females, 275 to 435 gms.

Dose	Results	Dose	Results
0.000040	— Recovered	0.000040	— Recovered
0.000050	— Recovered	0.000045	— Recovered
0.000060	— Recovered	0.000050	— Recovered
0.0000625	— Recovered	0.000060	— Recovered
0.0000650	+ Died*	0.000060	— Recovered
0.000070	— Recovered	0.000065	— Recovered
x0.000075	+ Died	0.000065	— Recovered
0.000075	+ Died	0.000065	+ Died
0.000075	+ Died	x0.000070	+ Died
0.000080	— Recovered*	0.000070	+ Died
0.000085	— Recovered*	0.000075	+ Died
0.000085	+ Died	0.000080	+ Died
0.000090	+ Died	0.000090	+ Died
0.000090	— Recovered*	0.000090	— Recovered*
0.0000925	— Recovered*	0.0000925	+ Died
0.000095	+ Died	0.000095	+ Died
0.000095	+ Died		
0.000100	+ Died		

M. L. D.=0.000075.

M. L. D.=0.000070.

* Died or recovered "out of order."

In order to draw conclusions from the above tables it is desirable to condense the results into a single table as follows:

MINIMUM LETHAL DOSES BY MONTHS.

	Small Males	Large Males	Small Females	Large Females	Average
July, 1911.					
Lab. 27° C.	0.0000525	0.0000525	0.0000525	0.0000500	0.0000519
Aug., 1911.					
Lab. 27° C.	0.0000525	0.0000525	0.0000525	0.0000500	0.0000519
Sept., 1911.					
Lab. 23.5° C.	0.0000525	0.0000525	0.0000525	0.0000470	0.0000511
Oct., 1911.					
Lab. 21.25° C.	0.0000600	0.0000525	0.0000550	0.0000500	0.0000544
Nov., 1911.					
Lab. 22° C.	0.0000570	0.0000600	0.0000570	0.0000570	0.0000577
Dec., 1911.					
Lab. 18.5° C.	0.0000700	0.0000700	0.0000700	0.0000700	0.0000700
Jan., 1912.					
Lab. 20° C.	0.0000625	0.0000625	0.0000725	.....	0.0000658
Pens 12° C.					
Feb., 1912.					
Lab. 18.5° C.	0.0000650	0.0000750	0.0000850	0.0000700	0.0000737
March, 1912.					
Lab. 20° C.	0.0000300	0.0000800	0.0000850	0.0000750	0.0000825
Pens 12.5° C.					
April, 1912.					
Lab. 24° C.	0.0000800	0.0000825	0.0000775	.....	0.0000800
Pens 17° C.					
May-June, 1912.					
Lab. 25.75° C.	0.0000950	0.0000825	0.0000750	0.0000850	0.0000844
Pens 25.5° C.					
July, 1912.					
Lab. 28° C.	0.0000650	0.0000700	0.0000750	0.0000700	0.0000700
Pens 25.5° C.					
Average.....	0.0000668	0.0000660	0.0000678	0.0000624	0.0000661

A study of the above table discloses many interesting facts. The results taken month by month naturally fall into four periods. There was scarcely any variation during the months of July to November, inclusive, the average M. L. D. for all classes of pigs running 0.0000519, 0.0000519, 0.0000511, 0.0000544, and 0.0000577. For December and January, these figures increase rather suddenly to 0.0000700 and 0.0000658, respectively. For February, March, April and May-June, they still further increase to 0.0000737, 0.0000825, 0.0000800, and 0.0000844, the high mark. For July, they drop again to 0.0000700.

That this variation might have been caused by any change in the test substance is hardly conceivable. As already stated, the ouabain crystals were kept in dry form—fresh solutions being prepared for each series of tests. To guard against possible mistakes in making up these solutions, the results were in several instances checked against new solutions. Moreover, it is not at all probable that ouabain in dry crystalline form, would remain unchanged for a period of five summer and fall months and then deteriorate during the cold winter months. To make sure of this, however, a new sample of ouabain was procured in July, 1912, and tests were run on this in comparison with the old sample, whereby practically identical results were obtained. Moreover, the melting points of both samples were determined and found to be the same, namely 188 to 189.5° C.

The cause or causes of the variation seem therefore to be narrowed down to the questions of temperature and season, for the average M. L. D. for each of the classes of pigs, during the whole year are nearly identical, namely:

Small males.....	0.0000668
Large males.....	0.0000660
Small females.....	0.0000678
Large females.....	0.0000624

That for the large females is slightly lower owing to the fact that no pigs of this class were available for the tests during two of the months when the results on the other classes were high. It is apparent, therefore, that sex and size may be disregarded and that just as nearly uniform results will be obtained, if indeed, not more so, by running a sufficient number of pigs in each test, eliminating the factor of sex, and basing all doses on 250 gm. of animal weight.

But not so with the questions of temperature and season. These factors undoubtedly play an important part in the cause of the observed variation but the data so far obtained do not in any satisfactory way make clear just how these factors work. A continuation of this study will be made in order to throw more light on the question.

That the temperature alone is the cause of the variation, however, is clearly shown not to be the case. The M. L. D. does not directly respond to observed temperatures, but it may be seen that in a general way, the resistance to ouabain poisoning is greater following a long continued period of cold weather, and is lower following a long period of hot weather. Thus the results of July and August, 1911, were obtained during a protracted spell of the most sultry and oppressive weather noted in Philadelphia in many years. The resistance, however, continued low throughout the following fall months, and it was not until December and January that any noted increase in resistance occurred. Again this resistance having steadily increased under continued cold weather until the

M. L. D. became 0.0000825 in March, this figure was practically maintained throughout the warmer spring months and did not drop again until July, when it went down to 0.0000700.

If sudden changes, or temporarily higher or lower temperatures, alone caused marked changes in resistance, it might be possible to regulate the temperature during the period of a test so as to guarantee uniformity of result. Such, however, is true only to a certain extent as will be shown later. In July, 1911, with an average laboratory temperature during tests of 27° C., the M. L. D. was lower than in July, 1912, with an average laboratory temperature of 28° C. The latter, however, was only temporary and had been preceded by an unusually cool and pleasant spring and cold winter, while the July of 1911 was sultry and humid throughout and was preceded by a hot and oppressive spring. General seasonal conditions therefore play a most important part in this variation in susceptibility.

On the other hand, that marked changes in temperature have an immediate effect on susceptibility is shown by the following experiment. The male pigs, large and small, used in the January, 1912, experiment were found to have a M. L. D. of 0.0000625. This figure was obtained in the usual way by keeping the pigs in their regular city quarters for a week or more where the average temperature during that time was about 12° C. The pigs were then transferred to the laboratory during their 24 hours of testing, where the temperature averaged 20° C. Having a sufficient number of male pigs left over, we determined, therefore, to observe the M. L. D. on this same lot of pigs at the temperature of their quarters, namely 12° C. Accordingly, on the following day, we injected some of these remaining pigs in their quarters and allowed them to remain there during the 24 hours of test. The temperature during this time ranged from 8 to 14° C. and the pigs used varied in weight from 300 to 505 gm. The result was as follows:

Dose	Results	Dose	Results
0.0000400.....	- Recovered	0.0000500.....	+ Recovered
0.0000450.....	- Recovered	0.0000550.....	+ Died
x0.0000475.....	+ Died	0.0000600.....	+ Died
0.0000500.....	- Died	0.0000625.....	+ Died
		0.0000650.....	+ Died

M. L. D. = 0.0000475.

As a check on the regular results whereby an M. L. D. of 0.0000625 was obtained, five additional pigs, ranging in weight from 340 to 400 gms. were then transferred to the laboratory, where the temperature ranged from 22 to 24° C. and were then injected and kept during the test, with the same result as was obtained before, as follows:

Dose	Results	Dose	Results
0.0000570.....	- Recovered	0.0000600.....	- Recovered
0.0000600.....	- Recovered	x0.0000625.....	+ Died
		0.0000650.....	+ Died

M. L. D. = 0.0000625.

It is apparent therefore that in cold weather the tests should be made in a room at normal temperature—say 22 to 25° C. But on the other hand, pigs inured to colder winter weather, when tested in a comfortably warm place, are more resistant than those which have been subjected for a long time to hot, sultry summer weather.

We are forced to the conclusion that in order to secure the highest possible state of uniformity for the heart stimulants by means of minimum lethal dose

guinea pig method, standards should be based upon a standard M. L. D. of ouabain for 250 gm. of animal weight and we would propose for this standard, a dose of 0.000066 gm. crystallized Strophanthin (Thoms), or Ouabain. Each lot of 50 to 100 pigs should be kept for one week under proper conditions of ventilation, feeding, temperature, etc., and the M. L. D. of ouabain, irrespective of size and sex, be determined at normal room temperature. The ratio of this result to the standard M. L. D. of 0.000066 per 250 gm. of animal should then determine the standard for all preparations to be assayed by means of this lot of pigs. Such a procedure would practically eliminate the variation of 22.7% below to 27.7% above, which represents the extreme range of variation observed during the whole year's experiments. That standardization without this precaution, however, is a vast improvement over no standardization is apparent when we realize that the natural variation in the heart stimulating drugs amounts to several hundred percent.

We are also forced to the opinion that a complete and satisfactory biologic assay process for the *standardization* of the heart tonics, whether by means of guinea pigs or other mammals, or by means of frogs, is hardly yet feasible, for introduction into the Pharmacopœia. It would be exceedingly difficult to lay down any concise, rule of thumb method of *standardization* which could be followed by one inexperienced or but little experienced in the art, with the hope of getting concordant results, and particularly this is the case when we consider that the Pharmacopœia has the force of inflexible authority stamped upon it by its relationship to State and Federal laws. This does not preclude the possibility, however, of making official certain *minimum* biologic requirements, using guinea pigs or frogs, to guard against fraudulent, inert or badly deteriorated drugs and preparations.

A further consideration of the cost of the guinea-pig method is appropriate at this time. The advocates of the frog method for the standardization of the digitalis series criticise the Reed and Vanderkleed guinea pig method on the ground that it is too costly as compared with the frog method. Haskell¹ says: "There can be no question as to the economy of the different methods. Frogs for an assay cost us fifty cents, guinea pigs would cost us about \$4.00." Worth Hale² says: "Frogs for an assay would cost approximately 50 cents. If mammals are used on the basis that at least three should be used for each assay, the cost would be from \$2.00 to \$3.00." Walters & Haskell³ say: "In the assay of the digitalis preparations by the 'one hour' frog method we practically never use more than 18 frogs, the cost of which varies from 40 to 75 cents. Our ignorance of the routine use of the guinea pig method prevents us from stating definitely the cost of an assay. It scarcely seems probable, however, that on an average, less than six or eight animals would suffice. The guinea pigs we have been able to obtain have cost us from 40 to 75 cents apiece, making the probable cost of an assay from \$2.00 to \$6.00, about 800 percent greater than the frog method."

¹ Physiologic Drug Testing. J. A. Ph. A., July, 1912.

² Hygienic Lab. Bulletin No. 71, p. 15.

³ Susceptibility of the guinea pig to poisoning by digitalis. J. A. Ph. A., July, 1912.

It is perfectly apparent that these writers all calculate the cost of one assay by multiplying the *number of animals used* by the value of one animal. In our routine work, however, we use the animals over and over until they are killed, only requiring that four or five days elapse between injections and that they appear normal. The fact that it is possible not only to use the pigs over and over but also to obtain accurate results thereby, has been proven by us many times, by determining the M. L. D. of the same preparation both on "used" and "unused" pigs. We have further proven this by using "unused" and "used" pigs in the same series. In all cases, the results obtained from both classes of pigs have been practically concordant.

Following are typical examples of the results obtained from these experiments:

Experiment No. 1: The doses given represent grams of ouabain per 250 gm. body weight of animal:

USED PIGS.			
Temperature in laboratory 15 to 25° C.			
Pigs varied in weight from 205 to 295 Gms.			
Dose	Results	Dose	Results
0.0000625.....	Recovered	0.000075.....	Recovered
0.000065.....	Recovered	0.000070.....	Recovered
0.000065.....	Recovered	0.000070.....	Recovered
0.0000675.....	Died *	x0.0000725.....	Died
0.0000675.....	Recovered	0.0000725.....	Died
		x 0.0000725.....	Died

M. L. D.=0.0000725.

* Died "out of order."

UNUSED PIGS.			
Temperature in laboratory 15 to 22° C.			
Pigs varied in weight from 235 to 335 Gms.			
Dose	Results	Dose	Results
0.00004.....	Recovered	0.0000625.....	Died *
0.00005.....	Recovered	0.000065.....	Recovered
0.000055.....	Recovered	0.000065.....	Recovered
0.00006.....	Recovered	0.0000675.....	Recovered
0.00006.....	Died *	0.0000675.....	Recovered
0.00006.....	Recovered	0.00007.....	Recovered
0.0000625.....	Recovered	0.00007.....	Recovered
0.0000625.....	Recovered	x0.0000725.....	Died
		0.0000725.....	Died

M. L. D.=0.0000725.

Experiment No. 2:

USED PIGS.			
Temperature in laboratory 18 to 24.5° C.			
Pigs varied in weight from 210 to 300 Gms.			
Dose	Results	Dose	Results
0.000075.....	Recovered	0.0000725.....	Recovered
0.000060.....	Recovered	0.0000725.....	Recovered
0.0000625.....	Recovered	0.000075.....	Recovered
0.000065.....	Recovered	0.000075.....	Recovered
0.000070.....	Recovered	x0.0000775.....	Died.
0.0000725.....	Died *	0.000080.....	Died
		0.000080.....	Died

M. L. D.=0.0000775.

* Died "out of order."

UNUSED PIGS.			
Temperature in laboratory 18 to 24.5° C.			
Pigs varied in weight from 210 to 245 Gms.			
Dose	Results	Dose	Results
0.000057.....	Recovered	0.000070.....	Recovered
0.000060.....	Recovered	0.0000725.....	Recovered
0.0000625.....	Recovered	x0.000075.....	Died
0.000065.....	Recovered	0.000075.....	Died
		0.0000775.....	Died

M. L. D.=0.000075.

Experiment No. 3: Eight pigs which had previously been used for testing antitoxin were divided into two lots of four pigs each. These were injected with sub-minimum lethal doses of 0.00003 gm. and 0.00004 gm., respectively, per 250 gm. body weight of animal. The pigs were then mixed, and after allowing three

days for recovery, the M. L. D. on these "used" pigs was determined in comparison with a series of "unused" pigs, with the following results:

USED PIGS.

Temperature of laboratory 27 to 30°C.
Pigs varied in weight from 309 to 410 Gms.

Dose	Results	Dose	Results
0.000050	Recovered	0.000075	Recovered
0.000060	Recovered	0.000080	Very sick—
0.000065	Recovered		Recovered
0.000070	Recovered	x0.0000825	Died
0.0000725	Recovered	0.000085	Died
		0.000090	Died

M. L. D.=0.0000825.

UNUSED PIGS.

Temperature of laboratory 25 to 26°C.
Pigs varied in weight from 255 to 385 Gms.

Dose	Results	Dose	Results
0.000050	Recovered	0.000080	Recovered
0.000060	Recovered	x0.000080	Died
0.000065	Recovered	0.000080	Died
0.000070	Recovered	0.0000825	Died
0.0000725	Recovered	0.000085	Died
0.000075	Recovered	0.000090	Died

M. L. D.=0.00008.

Having proven by the above experiments that it is possible to use the pigs repeatedly, *the cost of an assay by the guinea pig method is therefore dependent solely upon the number of pigs killed and not on the number injected.* In order to determine the condition of the heart, with the "one hour" frog method, *all frogs injected must be killed.*

In order to ascertain both the average number of animals used and the average number of animals killed, per assay, by the guinea pig method we went over our laboratory records and found that we had used 3,731 pigs for 333 assays, or an average of 11.2 pigs per assay. Of these 1,742 were killed, making an average of 5.2 pigs per assay. Guinea pigs cost us on an average 40 to 50 cents apiece, making the cost of a single assay range between \$2.08 and \$2.60. It takes from 14 to 18 frogs for one assay. Frogs cost us on an average of 75 cents to \$1.25 per dozen or \$1.12 to \$1.88 per assay. It can be readily seen, therefore, that the cost of an assay by the guinea pig method is only about 56% greater than by the frog method, instead of 800% greater, as estimated by Walters and Haskell.

Since our experiments have proven that pigs which have first been used for testing antitoxin can be used for assay purposes, it can readily be seen that manufacturers who make antitoxin, can do this work at a still further reduction in cost, as pigs once used in antitoxin standardization cannot be used over again for that purpose.

Attention is also called to the simplicity of determining what the "end reaction" is in the case of the guinea pig M. L. D. method. A review of the detailed tables given in the first part of this paper shows that of the 560 pigs injected in the whole series of tests, only 41, or about 7%, died or recovered "out of order." In no series, except possibly that for small female pigs in July, 1912, would any one have difficulty in concluding what M. L. D. is really indicated. This is not so readily apparent in the case of the "one hour" frog method. In our paper read at Boston last year, we appended some results obtained with frogs from various sources. We have continued these frog experiments but as they are foreign to the scope of this paper, we have presented them in another communication.

SUMMARY.

1. Sex and weight may be dismissed as unimportant in the variation of guinea pigs to ouabain poisoning.
2. Season and temperature are to be regarded as the principal causes of this variation.
3. Guinea pigs inured to cold weather are more resistant to ouabain poisoning than those which have been subjected to a continued season of torrid weather.
4. Increased resistance brought about by acclimation to cold weather persists well into a subsequent heated season, and vice versa.
5. Assays should be conducted at average normal room temperature.
6. To secure the highest degree of accuracy in standardization work, the standard should be based upon a standard minimum lethal dose of 0.000066 gm. ouabain for 250 gm. pigs.
7. The extreme average variation for all classes of pigs ranged from 22.7% below to 27.7% above the average, during the whole year.
8. The cost of the guinea pig assay process depends solely upon the number of pigs killed and not upon the number injected, as pigs which survive may be used over again with accurate results.
9. Out of 560 pigs injected in the series of tests only 7% died out of order, thus rendering easy the determination of the "end reaction."
10. No biologic assay process for the purpose of *standardizing* the heart tonics is advisable for introduction into the Pharmacopoeia, but the setting forth of certain *minimum* biologic requirements, to guard against fraudulent, inert, or badly deteriorated drugs, and preparations, is feasible.

PHYSIOLOGIC LABORATORY OF H. K. MULFORD Co., August 6, 1912.

DISCUSSION.

Prof. L. E. Sayre said that this paper was a very valuable presentation of some important subjects to this Association, and he wanted in particular to call attention to the last paragraph, No. 10:

"No biologic assay process for the purpose of *standardizing* the heart tonics is advisable for introduction into the Pharmacopoeia, but the setting forth of certain *minimum* biologic requirements, to guard against fraudulent, inert or badly deteriorated drugs and preparations is feasible."

Prof. Sayre said he wanted to emphasize that statement as meeting his heartiest approval. At one time every one thought diphtheria serum could not be introduced into the Pharmacopoeia with a standard for it. He had championed the idea that it could, and it took that form and was now in the Pharmacopoeia. He hoped that the coming Pharmacopoeia would seriously consider the statement of a biologic method or standard, agreed upon by biologists.

H. C. Hamilton, of Detroit, asked Mr. Vanderkleed if it was not just as necessary to use the standard when guinea-pigs were the test animal as when frogs were the test animal. He said he had not gathered from the presentation of his papers that he had recorded this point.

Mr. Vanderkleed responded that it was to determine that very thing—to throw light on whether or not it was necessary to do that—that this set of experiments had been made. As the report showed, there was a variation of from 22.7 percent below to 27.7 percent above the average, in the whole range. If the guinea-pigs were not standardized, there was a possibility of just so much variation.

Mr. Hamilton said his conclusion from this was, that it was no argument against the use of frogs, necessarily, because the standard would have to be run in both cases.

Mr. Vanderkleed responded that it was so stated in the paper, that this did not preclude the value of the frog method, provided the frogs were standardized. But it did seem to

emphasize the greater necessity of standardizing the frog than the guinea-pig. If the guinea-pigs were not standardized, there would probably be a range within 10 or 15 percent, most of the time, whereas with the frogs the variation would be from 200 to 500 or 100 percent, for a difference of time of only one month.

The Chair said that he was unfortunately unable to follow the reading of these papers very closely, and what he had to say might have been discussed in the papers, but he knew that if the frog method was used, it was absolutely necessary to keep the frogs at standard temperature. Then, too, it was necessary to use caution in comparing the variation and the susceptibility of frogs and guinea-pigs. With one poison—for instance, ouabain, as compared with the susceptibility to another poison—for instance, digitalis—the variations did not run the same with frogs and guinea-pigs, and some caution would be necessary. It should not be taken for granted that because frogs and guinea-pigs varied in a certain way with ouabain that they would vary in the same way with digitalis.

WRITING AN ADVERTISEMENT.

To speak to possible customers, you get up a little form, worded as you think to the best advantage, and this is your advertisement. There are certain things that an advertisement should be. Above all, it should be truthful; it should not attempt to mislead or deceive. It should be clear; you are speaking to the lowest intelligence, as well as to the highest. This is not platform oratory, its only object being to get business, and any honest man's money is acceptable to you. An advertisement should be forceful, that is, earnest. In combining these three points, we think you get the basis of a successful advertisement. It should be truthful, clear, and earnest, just exactly the points upon which you would found an argument in talking to a friend.

There are other things that an advertisement may be, in addition to what it should be. It may be humorous, if you wish, and if you are able to tell what humor really is. Smartness is not humor, by a long shot, although people addicted to it evidently think it is. Flippancy is not humor. Humor is a kindly something which enables a man to present an argument in a genial way. The American people are great lovers of humor and things appeal to them which would not appeal to the peoples of other lands. A really humorous advertisement carries weight of its own, and is therefore valuable. A great many advertising experts decry the use of humor, but the writer believes it has its uses and is valuable in its own place.

Humor is an edged tool, however, and must be carefully handled. What you want to be is genial, not humorous at the expense of somebody else. A rough joke nearly always means anything but a joke to its victim. What makes others laugh, makes him squirm. Therefore, do not aim your wit at the religion, or the politics, or the infirmities, of others. These are three great points to be avoided, as you have learned in your daily intercourse with others, and here again we see that talking in an advertisement is much like having a personal conversation with a friend.—*H. S. Adkins in National Druggist.*

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

WHY PHYSICIANS DO NOT READ THE PHARMACOPŒIA?

H. L. CHAMBERS, M. D., UNIVERSITY OF KANSAS.

If we trace back the history of medicine and pharmacy as nearly to a focus as we can, we come to a condition substantially as follows: The learning that we should consider honorable, dignified, and worthy, was conserved in the priesthood. The medical profession was one of its potentialities. Pharmacy was to develop with and out of internal medicine, being for a long time of equal advancement with therapeutics. At the same time, i. e., when both medicine and pharmacy were unevolved possibilities of the priesthood, there was as now a body of alleged learning, but which contained a considerable proportion of error and even of fraud, and which we now call quackery. This mass of truth and error insofar as it came to affect medicine and pharmacy, was in the hands of two sets of people—the inorganic chemistry belonged to the alchemists, and the organic chemistry including the pharmacy, was exploited by the witches and sorcerers.

Please bear with me while I point out that this group of irregulars, who are always bigoted, and often intellectually dishonest, and morally perfidious, has, nevertheless done much to further the development of science, especially the practical applications of science. They are on this account to be considered in finding answers to the questions now under discussion.

As the evolution of general and special learning and practice progressed, the physician was evolved from the priest, the surgeon from the barber, and the chemist from the alchemist. Pharmacy seems to have developed in a general way about as fast as the demand for it arose. Naturally the honorable side of it was in the hands and under the direction of the physicians; the other side remained with the witches and other irregulars of various kinds. In the next phase, some physicians will be found specializing in the preparation of medicines, and some will have taken up this work who are not and never were physicians. This seems to be the origin of pharmacy as a distinct profession, and is, I believe, true, in every part of the world. As populations grew denser and conditions more stable, the consensus of opinion and practice of various groups of physicians and pharmacists would crystallize into sets of pretty definite rules of practice—and pharmacopœias were born. Naturally each country had its own, maybe even several—and they were influenced in this by social, racial, and political considerations, as well as by medical and pharmaceutical ones. You remember that our first Pharmacopœia in this country was published in 1778, for the use of an army hospital. The Massachusetts Medical Society in 1808 published

a Pharmacopœia after trying vainly for three years to get the cooperation of medical bodies in other states. There were other local efforts along the same lines, but no general one until Dr. Spalding started it in 1817. His scheme, you remember, was to divide the United States into four districts, make a convention of representatives from every medical institution in each, let each convention make a Pharmacopœia, and from these four district Pharmacopœias, to compile a national one.

With some modifications this plan was carried out and the first "U. S. P." was the result. If you note that the whole of it came from the medical profession, it seems reasonable to suppose that medical men would read it.

In the nine decades that have passed since that Pharmacopœia, there have been many changes that affect both it and the physician's relation to it. The physician has greatly modified and, we hope, improved his therapeutic armamentarium. Of the things that now interest him in a practical way, climatology, balneology, mechano—thermo—electro—and psycho—therapeutic measures cannot well be included in the Pharmacopœia. The inoculations, vaccinations, and most of the serum treatments must be negotiated without its guiding influence. Moreover, the modern physician is interested in keeping well by preventing disease, and the Pharmacopœia can give him no help here because it knows nothing about potable water, respirable air, nor edible milk. The surgeon's work is fundamentally mechanical so far as his therapy is concerned and the Pharmacopœia can furnish comparatively little that will supply his real needs. Suppose, however, that one desires to use some of the preparations mentioned in the Pharmacopœia. He relies on his local pharmacist or on the name of some pharmaceutical manufacturing house for assurance that the material is right. These men are far more expert and experienced chemists than he is, and his course in accepting their conclusions in such matters as more reliable than his own, seems fully justified.

Following this idea, he rarely puts any drug to a chemical test, since if there be any question about its purity, it is much easier and cheaper to throw it away and get some that is above suspicion.

Viewed in the light of these facts we should not expect physicians and surgeons to spend much time in the study of the Pharmacopœia, and I feel sure they do not.

Let us approach this question from another angle. Most of the physicians are engaged in practice, otherwise they do not interest us in this discussion. The practicing physician ought to be above all else a practical physician, and as such his primary interest must center in the means that promise most and best results. Being rather far-sighted he wants to know the cost in risk and actual damage now and hereafter of the results that he seeks. This means with reference to drugs that he is interested in their physiological action, and in their therapeutic and toxicologic possibilities. Since the Pharmacopœia knows nothing about any of these things, he does not turn to it when he needs help.

The desire on the part of chemists and others for authoritative standards and tests has had its influence on the development of the Pharmacopœia, tending to put it still further away from the practitioner. It has now become a large volume with formidable catalogues of tests, processes and assays, none of which

the physician expects to try out for the reason that he is more than willing to accept the conclusions, amounting to warranties, of his pharmacist.

Suppose one is in doubt about the compatibility of the ingredients of a proposed mixture. The Pharmacopœia has no direct information about chemical incompatibles and none at all about physiologic ones. Maybe he desires knowledge of the proper dose of a given drug for producing the action indicated, and wishes to know how often to repeat the dose to maintain such action. The Pharmacopœia gives only indefinite information about the size of dose required, and none at all about the frequency of repetition.

Summarizing the discussion thus far, we may say that the physician has two sufficient reasons for not reading the Pharmacopœia, viz.: First. He fully trusts the application of its information to the pharmacist without question. Second. The information he seeks for practical application by himself is not contained in the book.

There remains yet to be noticed the effect on the physician of the illegitimate branch of the science and I hope no one will be offended personally or professionally if I classify the Pharmacopœia with its direct associations as the present representative of what I have described as honorable, dignified, and worthy learning of the ancients, and classify the makers of pharmaceutical specialties, synthetics and the like as the modern representatives of what I have called the illegitimate branch of the science. No one may deny that these people know something or that they make important discoveries in medicine and pharmacy. So far back as we can trace them they have known some real science and have discovered actual and important truths.

They differ from other scientists in that they are primarily commercial rather than scientific, the end or aim of their effort is the accumulation of money rather than the discovery of truth, i. e., the scientists represented in the Pharmacopœia make money and leisure a combination for the discovery of truth, while the other fellows make of science and discovery a means for the attainment of wealth and ease. The latter being only commercial scientists, are not so careful in statements concerning their products or discoveries as are the other people, and since they nearly all claim some special skill, some secret process better than others know, or some new combination hitherto unknown, but now nicely worked out and patented or copyrighted by them and obtainable nowhere else—it is easy for them to make claims that will catch and hold the physician's interest. Even the most exaggerated claims find believers somewhere. The untried products of these commercial pharmacists are usually claimed to be new, and also said to possess distinct advantages over the old tried-out things discussed in the Pharmacopœia. The physician is thus led by his interest and his reading away from the Pharmacopœia and the preparations that it describes. Moreover, since these specialties, synthetics, etc., are sold at a much larger profit than the standard drugs, their promoters can afford to send skillful detail men about the country, persuading the medical men and sometimes even the pharmacists to prescribe and to stock them. This and what grows out of it also tends to keep the physician away from the Pharmacopœia.

When there is a revision, there are changes in the names of some preparations and changes in the compositions of some others that retain former

names. This would seem to be an urgent reason for reading the Pharmacopœia, but the manufacturers of specialties supply the profession with neat cards, stickers and the like showing in nicely tabulated form what these changes are and so keep the physician from feeling any need for it. Since these commercial pharmacists find it greatly to their financial advantage to keep the physician away from pharmacopœial preparations, it seems logical to suppose that they will continue to make every reasonable effort to keep him using secret and proprietary ones. There is nothing in this, tending to increase the popularity of the Pharmacopœia.

Are you ready for the condensed answers to the questions?

Q. Do the physicians read the Pharmacopœia?

A. They do not.

Q. Why do they not?

A. First. Those who prescribe standard drugs rely on their pharmacists to see that the preparations are up to the standard. Second. Those who dispense standard preparations, rely on their manufacturing pharmacists for assurance that the drugs are right. Third. Those who either prescribe or dispense specialties, novelties, etc., must rely on other sources than the Pharmacopœia for their information.

I append a little tabulated statement covering a small investigation made among my medical neighbors, and bearing somewhat on the questions I have tried to answer.

Number.	Years in Practice	Where educated.	Other Degrees	Dispense or Prescribe	Read Pharm?	Why? Other Remarks
1	12	Kans. Cty Med. College, now University of Kas.	Ph. G.	Both	Yes	Been a pharmacist and taught it. It is not generally read because not taught in med. schools.
2	34	Mo. Med. College.		Both	Yes	Does not read much nor buy late editions. Physiological action of drugs desired.
3	30	Ky. School of Med.		Both	Yes	Not last one. Reference only. More practical matter desired.
4	20	Meharry Med. Col.		Both	No	Not necessary.
5	27	Bellevue, University of Vt., E. M. I.	A. B.	Both	No	Get needs supplied in Materia Medica.
6	22	Bellevue.	Ph. D. A. M.	Both	No	Get what is wanted from books on Internal Medicine.
7	13	University Med. College, Kan. Cty., Mo.		Disp.	No	Never felt need of it.
8	21	American Med. College, St. Louis.		Both	No	Contents not interesting, useful or practical to practitioners.
9	17	Kans. Cty. Med. Col. now Univ. of Kans.	M. S.	Both	No	Not useful to me. Make it for pharmacists only.

There are no recent graduates working near me, so my canvass includes none. These men are all in active general practice, and are as well read as our region affords.—H. L. C.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

SUGGESTIONS ON THE TEACHING OF PHARMACEUTICAL ARITHMETIC.

MISS ZADA M. COOPER, PH. G., IOWA CITY, IOWA.

Because of the existence of an amazing amount of ignorance of pharmaceutical arithmetic on the part of those entering the profession it seems to me a subject worthy of consideration. If some of the causes for this ignorance can be better understood there is perhaps a greater possibility of improving the condition.

I say amazing amount of ignorance because of the statement made by members of the Board of Pharmacy in my own state that candidates for registration are often unable to solve the simplest problems and that the number who fail in this particular is sufficiently large to bring the deficiency plainly to their attention. Also I have read at various times that similar conditions exist in some other states and I have often noticed that some students who are quite proficient in other studies, particularly those branches which might be classed as memory studies, materia medica, pharmacy, pharmacognosy, are hopelessly lost before the task of solving some comparatively simple problem in arithmetic. Whether it is just a coincidence or not, I have noticed that almost all who do well in chemistry also do well in arithmetic. I have thought that perhaps the best explanation of this is that both require the use of the student's reasoning power. However, that is not the subject under discussion.

In the beginning I wish to say that if the personal pronoun occurs frequently in this paper it is simply because what I have to say is based upon conclusions drawn from my own experience, first, from the way the subject was presented to me as a student and later, from my observation of results of my own teaching of the same subject.

Theoretically, I believe the teacher of Pharmaceutical Arithmetic has a right to assume that in the beginning the members of his class have a thorough knowledge, a practical working knowledge, of the fundamental principles of arithmetic, but, actually one is confronted with an entirely different condition. It is the province of the teacher of the subject to apply arithmetic to pharmacy. I can think of no arithmetical process with which the beginning student of pharmacy should not be familiar. Most of our students come to us with diplomas from high schools of recognized standing. Some, it is true, have had only two years in high school, but that should make no difference in this case except that perhaps more advanced training makes the earlier subjects easier. As a matter of fact I have noticed that almost as often as not the poor student in this particular is the one with the diploma. During the past year the very

poorest student in my class had been graduated from what, one had a right to suppose, was one of the best high schools in our state. If I am correctly informed few pupils have any arithmetic after completing the grammar grades, since in some high schools it is offered as an elective. However, that is neither here nor there. My contention is just this: that it ought not to be necessary for the teacher of Pharmaceutical Arithmetic to teach fundamental principles of arithmetic itself.

One of the most serious conditions the teacher has to face lies right here. The total time allotted is only sufficient to cover the subject in hand and in justice to the majority of the class, the teacher cannot spend much of it in teaching fundamental principles to the minority, which minority in my experience is always present. It is possible to make some of these explanations in passing but not enough and the only alternative, it seems to me, is to give to these particular students one's personal attention out of class hours. Even this I have found to be inadequate—it helps but it cannot take the place of weeks of training or undo the bad habits of study in earlier years.

Just here, it might be best to try to account in some measure for this condition. I do not mean to arraign the public school system though the fault in part may be there, neither do I blame the teachers as individuals though I believe that sometimes they are responsible. It is probably due to a combination of conditions. We all know that from the entrance into the kindergarten to the exit from college in whatever line of study they may undertake, there are some who have a faculty of getting along and of making passing grades, and yet their knowledge is always superficial, never thorough. Such students just skim the surface of things, they never delve deep, they never know the reasons why and surface studying possibly has a much worse effect on a mathematical subject than some others. Then, and I believe this to be largely responsible for the inability to apply knowledge later, arithmetic is a thing which of necessity requires the learning of many rules. Even if they are reduced to a minimum and the reason for every one is explained in detail with due emphasis on the dangers of depending on memory, some pupils, without doubt, do little more than memorize the rule. It is only too obvious that solving problems is not a matter of memory alone. Then there is the excuse usually offered by the student himself that his mind is not mathematically inclined (in his own language, "Arithmetic always was hard for me"). In general this deserves little weight. Occasionally it may be really true but more often than not it is simply that the reasoning faculty has never been developed.

So much for general difficulties. Some need to be considered more specifically. One of the first things which becomes evident is insufficient knowledge of fractions, particularly an inability to handle decimals with ease and accuracy, and to convert common fractions to decimals and vice versa with any degree of accuracy or rapidity. This I believe to be important since it is customary to express small doses in common fractions if in Apothecaries' weight or measure, in decimal fractions if in Metric quantities. Then a thorough knowledge of decimals is a necessity in accurately using the Metric system, which every student is obliged to do. Later, this lack of information involves the student in all sorts of difficulties when dealing with percentage and specific gravity. In

fact, he needs it everywhere—he cannot get on at all without it, these points mentioned are only relatively more important than others. The next place that faulty preliminary training is especially evident is in percentage and its applications where sometimes students do not seem to know the first principles. Another deficiency of large importance is proportion and what it involves. Students tell me that they do not know how to state a proportion, that they never understood the placing of the different terms. I am at loss to say why they have not understood this—I only know it is so and as with the other difficulties mentioned it is a condition we have to face. There is no other reason for tracing them back so far except that; unless one recognizes the conditions and takes them into account in teaching Pharmaceutical Arithmetic, it is impossible to hope for any great success. I am well aware also that, in college at least, the proportion of students who come well prepared is large but not so large that the unprepared may be ignored. So much for the preliminary equipment of the class with which one has to work.

Considering the various subdivisions of Pharmaceutical Arithmetic somewhat in the order they are usually taught, the various systems of weights and measures are of primary importance. Most students are more or less familiar with all of these except the Metric and that, being simplicity itself, offers no special difficulties in teaching except to those people before alluded to who have trouble with decimals. One thing that might be worth mentioning is that the use of models of the units of length, measure and weight prove helpful to the student in forming mental pictures of these various measures and making the whole subject less abstract. Until the student thinks in Metric quantities there is little meaning in the system, for him. It is, of course, expected that each individual shall be thoroughly familiar with all of these systems and where and when each is used before passing on to the consideration of their relation to each other which is a very much greater undertaking.

Much as I have said about the evils of memorizing rules, here, I insist on the students memorizing certain equivalent weights and measures and not simply the fewest possible number that one must know to get along at all. I do this for the reason that there are certain of these that will probably be needed several times every day and I consider it important that they have these at their tongues' ends because of the immense saving of time. Life is too brief and time too valuable to waste it in looking up every equivalent or in making round-about calculations. For example I think it absolutely necessary that students learn that there are 29.57 gm. in a fl. oz., 28.35 gm. in an Av. oz., 31.1 gm. in a Troy oz.; that 1 gm.=15.432 gr., 1 gr.=64.9 mg., 1 lb.=453.592 gm., 1 M.=39.37 in., 1 in.=25.4 mm.; that there are 16.23 m. in 1 cc., 473.179 cc. in a pint; that 1 m. of water weighs .95 gr. Though enforcing this as rigidly as possible, at the same time I emphasize the fact that many of these can be calculated in case they are forgotten. In other words, I show them how they have been arrived at and which are the ones that are primarily necessary. Most of these are obvious to the deep thinking student, but because of the others one can take nothing for granted. To illustrate, I show them that if they remember that there are 15.432 gr. in a gm., the weight of each ounce in gm. can be calculated by dividing 480 gr., 45.46 gr., and 437.5 gr., respectively, by 15.432. Similarly I show them that

7000 gr. divided by 15.432 gives 453.592, the number of gm. in a lb., as does multiplying 28.35 by 16. Other instances like these might be cited but probably these suffice. Likewise, I show them that, remembering that 1 M. equals 39.37 in., the reciprocal of these figures gives the fraction .0254 M. or 25.4 mm., the equivalent of 1 in.; also that the reciprocal of 15.432 gives .0649 gm. or 64.9 mg., the equivalent of 1 gr. Students will question the need for all these but with a little experience will see the convenience and saving of time. Take, for instance, the conversion of doses from one system to another; so far as it is consistent with accuracy such calculations should be mental ones and the student finds he needs both 15.432 and 64.9. Usually in instances like this the approximate equivalent would be used but it is just as easy to learn the exact one in the beginning. To go a little farther, I show them that .95 gr., the weight of 1 m. of water, is obtained by dividing 454.6, the number of gr. in a fl. oz. by 480, the number of m. in a fl. oz. Similarly the relation existing between U. S. fluid measures and Imperial fluid measures. There are a good many more that I emphasize the convenience of knowing but do not ask them to memorize, like 2.11 pints in a liter, 3785.43 cc. in a gallon, 1 Imperial gallon of water weighs 10 lb. Av.

The next important subject is specific gravity and here for the first time one is obliged to deal with rules and it is necessary to guard against those rules becoming meaningless forms. For example, to obtain the specific gravity of a solid, divide its weight in air by its loss of weight in water. While to some the reasons are quite plain—to others it is quite necessary to explain that since any solid immersed in water displaces its own bulk which is equivalent to its loss of weight so one is simply dividing the weight of the substance by the weight of an equal volume of water. Another thing which applies everywhere but particularly when dealing with specific gravity is that often a problem may be solved in several ways. In reality the underlying methods are identical but details vary. In this way they learn to reason each question individually and not depend on one hard and fast rule. To illustrate take this problem: A druggist buys glycerin, sp. gr. 1.25, at 20c per lb. and sells a pint for 80c. Does he gain or lose and how much? It will be seen at once that one must ascertain the weight in lb. of the pint of glycerin, since it was bought by the lb. This may be done by multiplying the weight of a pint of water expressed in gr. 7273.6 and dividing by gr. in a lb. Thus—

$$\begin{array}{r} (454.6 \times 16) \div 1.25, \\ 7273.6 \times 1.25 \\ \text{Or } \frac{\quad}{7000} = \text{lb.} \end{array}$$

The same process can be employed but using Metric quantities. Thus—

$$\begin{array}{r} + 73.179 \\ (29.57 \times 16) \div 1.25 \\ \text{Or } \frac{\quad}{453.6} = \text{lb.} \end{array}$$

Or one may find the equivalent number of grains in a volume of water equal to a lb. of glycerin and divide that into the total measure. Thus—

$$\begin{array}{r} 7273.6 \\ \frac{\quad}{(7000 \div 1.25)} = \text{lb.} \end{array}$$

Likewise one may find the measure in cc. of 1 lb. of glycerin and divide that into the pint expressed in cc. Thus—

$$\frac{473.179}{(453.6 \div 1.25)} = \text{lb.}$$

It will be seen that the final result in each case is the same and though I do not believe the methods are equally good they are correct and sometimes a student will clearly see one and not another. Some may contend that so many methods lead to confusion in the student's mind. I can only say that I have not found it so, quite the reverse in fact. I believe there is nothing like seeing all around a subject to thoroughly understand it.

In proportion I make use of no unusual methods. If the student has understood it in his earlier studies he has no difficulty here except such as involve weights and measures and specific gravity and if these are well grounded he has none. I find one little thing helpful which I believe I can best illustrate by a problem. Cod liver oil has a sp. gr. of .92 and costs 60c a lb. What is it worth per gallon? I would have the student indicate the whole problem at once. Thus—

$$\begin{array}{l} 7000 : (7273.6 \times 8) \times .92 :: 60 : X \quad \text{or} \\ 453.6 : (473.179 \times 8) \times .92 :: 60 : X \end{array}$$

My idea is that no matter how many factors enter into any term of a proportion it is safer to indicate them all in the original proportion. Often they are more complex than this one given and the more complex the more danger of confusion.

Concentration and dilution are only applications of proportion and give no trouble to those properly prepared in its fundamental principles.

With percentage there is always trouble but most of this also is due to the lack of proper preparation. One thing might be worthy a little attention. Most of the texts advise the stating of a proportion and though this seems to help some students, to others it is more confusing than anything else. Again I can best illustrate by a problem. A certain drug contains 15% of extractive matter. How many gm. of extract can be obtained from 90 gm. of drug? By proportion we would have $100 : 15 :: 90 : x$.

The other method I use is simply that 15% means .15, since percent means by the hundred, and to obtain .15 of the total it is only necessary to multiply by .15.

Perhaps this is as good a place as any to say that no matter how much I may approve of the methods set forth in the text I may be using, I make it plain to students that they may use any correct method. Notice I say *correct* method. One should not tolerate for a moment the use of bad methods. I allow these variations from rule because sometimes a student has used some method until he uses it with ease and I see no logical reason why one should insist on taking the time to become familiar and speedy with another.

Alligation, I have found, has been very little taught in preparatory schools and one has to start practically from the beginning. After one has made plain the basic principles there are no difficulties except those that may be accounted for by unfamiliarity with proportions.

There is much in the manner of conducting a recitation to get the most out of it. I expect students to work all problems in the lesson assigned before coming to class but I never ask that problems be worked and handed in for correction. I believe that puts a premium on dishonesty. Instead I send a convenient number to the blackboard to work the problems I assign them and so far as possible I allow no notes made previously to be used. Then I expect an explanation of each problem, always insisting on the student's knowing the reasons for each step in the process. They soon feel the necessity of being able to work and explain the problem assigned since they know that a record of their recitations is always kept and that they in part make up the final grade. When one section has finished I send another to the board as before. In the meantime, I have those not at the blackboard working problems outside of those found in their text but on the same subject. These, I select from all the other books that I find available. I read the problems to them, trying so far as I can to vary the wording of these in order to make them think. I have used this plan for several years and find it valuable for several reasons. First, I believe there is nothing like a lot of drill to fix principles and methods firmly in their minds. Second, it promotes rapidity. There is nothing like doing a thing to enable one to do it easily. The path gets deeper every time it is used. Third, it helps me to know the capabilities of each individual better and the better I understand the individual needs, the more help I can be. If one is rapid but inaccurate I encourage accuracy even at the expense of speed. If another is slow he needs to learn to work more rapidly, though that is more a matter of temperament than training and is not to any extent within a teacher's control. When any given subject has been completed it is reviewed thoroughly, expecting students to be prepared on any part of it and here again as much as possible I give problems not in the text. Following the review, I usually give a written test these entering into the final grade, together with the daily recitations and final examinations.

Given reasonably good material with which to build and keeping one's class busy and interested with practical problems, real live questions, such as arise in their laboratory work or in business practice, they must be on the alert—there is no time for dreaming day dreams and it is only the very dull or poorly prepared individual who does not acquire at least a fair knowledge of the subject.

DISCUSSION.

Prof. Philip Asher, of New Orleans, said that the points brought out by Miss Cooper were simply reviewing the class-work over again, and he was reminded that the same faults that the students of Iowa possessed were possessed by those in the South, and doubtless by students all over the country. She had hit the key-note of the situation in using the expression, "There is a lack of reasoning power"; but he was not inclined to be so charitable as the writer. His idea was that it was not the fault of the teacher, but merely the natural tendency of students to skim lightly over the surface and not delve deeply into things. He did not hesitate to say that the modern system of preliminary education was wholly at fault. The large number of "ologies" that the modern system of school work wished to impose upon the young man was crowding out the more essential features that were needed in every-day life, whether one's vocation be that of shoemaker, carpenter, or pharmacist. The fact that arithmetic was the most essential of all studies was lost sight of. If arithmetic was properly taught in the primary schools, it would fit the student with reasoning power in after life, no matter what vocation he followed. Miss Cooper had stated that those

students who took kindly to chemistry also took kindly to arithmetic, and this merely emphasized the fact that such students had been properly drilled in the preliminary schools. He had been surprised on many occasions to have to stop sometimes in the latter half of his session, and attempt to show a student with a high school certificate the principle of simple decimals; and when it came to stating percentages decimally, as one-tenth or one percent, it was astounding to see the number of failures made by students who apparently had never heard of them before. Scientific work required a knowledge of these things, and they were being constantly used, and it was discouraging to have a student with a high school education look at his teacher as though he were stating an unheard of proposition. In conclusion, Prof. Asher, commenting upon Miss Cooper's statement that the metric system had given her no trouble, said that while he did not personally teach the metric system, he knew the complaint had always been made by the teachers of his school and others that it had been the greatest difficulty they had to contend with, though as a teacher he could not see why there should be any trouble in teaching anything as simple as the metric system.

PHARMACIST VERSUS PLUMBER.

At most the average ordinary prescription business does not exceed twenty a day. I believe the majority do less. These, when compounded, would require approximately fifteen minutes each or five hours' actual compounding time; average them at 60c each and we have the sum of \$12.00 gross receipts on what you would say is a fairly good prescription business. The average cost of material on these would be about six dollars. You may say it would be less, but when you take into consideration the nature of most of the prescriptions as written today you will find these figures about correct; in fact, 41 percent of 3,000 prescriptions filled in six stores in Baltimore were for unofficial products (not counting patented chemicals).

This leaves you a balance of \$6.00 gross profits for which you, Brother Pharmacist, give in return the most prominent and valuable space in your store, your highest paid help besides, and the most expensive equipment is usually installed. The general expenses as a rule are greatest in this department. What have you left when you deduct these items of expense from your gross profits?

If you had a plumber to do the work instead of a registered pharmacist he would charge \$5.00 for his time, leaving you a dollar for your profit. Do you wonder why a brother druggist from Canada, who has two paying drug stores, in a recent conversation, said to me: "I do not cater to the prescription business; it does not pay at the prices we get and the time required to compound them. I can do more business and make more profit by keeping my clerks busy selling merchandise and my own make goods."—*Richard T. Messing.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

MASSA FERRI CARBONATIS.

L. E. SAYRE, LAWRENCE, KANSAS.

Responding to a request of the enterprising chairman of the Section on Practical Pharmacy and Dispensing, I offer, in discussion, a few remarks on Vallet's mass, suggesting a method for its improvement. There are many who complain that the present official formula yields a preparation which is too soft.

The sub-committee (No. 13) is now considering the advisability of revising this formula, and I have the consent of Mr. Raubenheimer to present his suggestions relating to proposed changes.

Besides the soft consistence of the mass, Mr. Raubenheimer points out other faults in the U. S. P. formula and process.

1. In order to completely dissolve the ferrous sulphate, and to prevent any loss by the formation of oxide or hydroxide, it is absolutely necessary to add a small quantity of diluted sulphuric acid.

3. The capacity of the flask, instead of 500 cc., could well be 1000 cc., which would greatly facilitate the washing of the precipitate. The codex now orders a 2000 cc. flask for the same quantity of chemicals.

4. Instead of washing by decantation it would be an improvement to use a syphon, which is also ordered in the U. S. P. process for Ferri Carbonas Sacharratus.

5. "Washing until the saline taste is gone." This in the presence of syrup used in the wash water is quite hard to determine. Much better and more correct pharmaceutically and chemically would be "until the washings show merely a slight cloudiness with barium chloride T. S.

6. "Drain the precipitate on a muslin strainer and express as much of the water as possible." This is a very wasteful method, so wasteful that the text-books state that instead of actual yield of 42 gm. (41.7) only 35-36 gm. of ferrous carbonate are obtained. The codex orders the strainer to be previously moistened with syrup, a method which is well worth adopting by the U. S. P. Revision Committee.

7. The magna is ordered to be mixed with 38 gm. of clarified honey and 25 gm. of sugar and evaporated to 100 gm. This evaporation to a definite weight is a decided advantage over the codex method which evaporates to the somewhat indefinite consistence of an extract.

To overcome the objection above referred to, in the beginning, namely the softness of the mass, it is recommended that lactose be substituted for sucrose.

It has the decided advantage of being less soluble than sugar, thereby acting as an absorbent and producing a better pilular mass. It acts as a reducing agent, the same as honey. The codex formula prescribes lactose. We have experimented with the above formula and find that the resulting mass, in the dry climate of Kansas, becomes too dry and hard, but by a proper addition of glycerin (also a reducing agent) a proper permanent consistency may be secured.

Vallet's mass is seldom kept in stock in the middle west but we find it is more frequently found on the prescription counter shelves in the east. In the west the saccharated ferrous carbonate is popular.

This latter preparation is standardized. There is no reason why the other should not be, as the process for analysis is very simple.

Mr. Raubenheimer suggests that the addition of a small amount of magnesium oxide to the magma before evaporation prevents oxidation and has a very decided advantage of imparting a greenish color to the mass, a very desirable feature.

If any of the pharmacists, interested in this Section, would care to experiment in making this preparation acting upon the above suggestions, their experience, if sent to me or to any member of Sub-committee 13, would be highly appreciated. Change present formula as follows:

1. Increase sugar from 25 to 35 and decrease honey from 38 to 25 gm.
2. Use lactose in place of sugar and honey (add 30 gm. lactose to drained magma).
3. Also add 5 gm. magnesium oxide.

And report results, with any suggestions.

DISCUSSION.

Prof. H. V. Arny, of New York, said this recipe of Mr. Raubenheimer's had been brought to his attention by that gentleman, and knowing how thoroughly Mr. Raubenheimer did everything he undertook, he himself, while a colleague of Mr. Raubenheimer's on Sub-Committee Thirteen, did not try out his recipe. On the road to Denver, however, he had stopped at Cleveland and had talked with Louis C. Hopp, also a member of the committee, and the latter agreed with Prof. Sayre that, by Mr. Raubenheimer's recipe, the mass, on standing, became too hard. Prof. Arny said he had had considerable experience with the U. S. P. recipe, and had not, as a rule, found the lack of stiffness described. It all depended on whether the manipulator got the magma off the strainer and thoroughly mixed. In his own work in Cleveland, he had been accustomed to take the samples made by the students and compare the iron content. There was nothing simpler than to find the iron content of the mass by the simple process of ashing. He had found in that way that the soft masses would run sometimes as low as 15 percent, and some ran up to 35 percent. Of course, he said, the operator could never get 42 percent. By this means, a fairly uniform product was obtained. In closing his remarks, Prof. Arny said he stood ready to confess ignorance upon one point: Although in making this mass practically the exact molecular proportions of crystallized ferrous sulphate and crystallized sodium carbonate were taken, yet, when these were mixed and put in a suitable bottle and corked, there was a large amount of carbon dioxide given off. He expressed the hope that someone could enlighten him on that subject.

Prof. Sayre asked Prof. Arny if he could tell the cause of the green color by adding magnesium oxide, and the latter replied that he could not. He said that Mr. Hopp had called attention to that point when he had seen him at Cleveland recently. He regarded it as an interesting thing. Mr. Hopp had taken some of this mass and made it into pills, cut-

ting one of them—a five-grain pill—and moistening by putting a drop of water on it and sprinkling a little magnesium oxide on top, when this green color appeared.

F. T. Gordon, of Philadelphia, asked Prof. Army if he had ever tried glucose instead of sugar. Mr. Raubenheimer, he said, spoke of washing the precipitate with sugar-water, and he had wondered if he had ever washed it with a solution of glucose, which was a very powerful reducing agent, the tendency being, if there should be any ferric iron present, to return it to the ferrous state.

Prof. Army replied that, of course, it was supposed to be made in the present recipe by using sugar or honey. He thought this would be a capital scheme, and that glucose would be better than glycerin.

Mr. Gordon went on to say that he had made an experiment with glucose in this way, especially with regard to iron salts, where it was necessary to keep the salt in a ferrous state, and had found glucose to have a positive action in preventing oxidation; or, if the substance was oxidized in the course of time, to reduce it. Sugar in that case was very apt to be converted into invert sugar. The only precaution was to test the glucose and see if it was free from sulphurous acid. Glucose, he said, did not get hard or brittle, did not dry out like sugar, or crystallize.

In answer to a question by Prof. Puckner as to whether he used the fluid or dry solid glucose, Mr. Gordon said he used the ordinary syrupy glucose. There were two commercial forms, he said, and if the operator ordered from the wholesaler he would probably get the saturated syrupy solution. Though glucose could be obtained in the dry, solid form, that was a detail he had not particularly considered.

Prof. Puckner said his reason for asking this question was, that he had had occasion to handle a great deal of glucose and dextrose, and had found them increased in purity in the last four or five years very markedly, the present degree of purity of commercial glucose being about as good as the highest grade four or five years ago.

Prof. Army asked whether glucose would possess the desired adhesiveness. He thought it would necessitate establishing a standard for glucose, and making it official in the Pharmacopoeia. Mr. Gordon responded that it could be suggested that the glucose should be syrupy and free from sulphites. For practical working purposes, the syrupy glucose was much more convenient to handle than the dry.

Mr. Geo. H. P. Lichthardt said Prof. Sayre had remarked that he did not know about the use of this preparation in the West. In his state (California) it was practically obsolete—it was not used at all. The physicians there ordered Blaud's pills. The physicians were using that more and more in the last four or five years, since the introduction of albuminous compounds of iron, which had stimulated the use of iron; and the pharmacists had been trying to get them away from this by getting the doctors to prescribe the freshly-prepared Blaud's mass.

A member from Chicago, referring to this preparation of iron, said that he had no occasion to make Blaud's or Vallet's mass. In his section the formula was prescribed in the dry form absolutely, and nothing else. The ingredients were mixed dry, and this was insisted upon. He had found at a number of places in Chicago that this was growing to be the common habit.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

ADVERTISING A RETAIL DRUG BUSINESS.

A. V. PEASE, FAIRBURY, NEB.

We are apt to think of advertising as a recent development of commercialism. But it goes back far beyond either modern or medieval buying and selling. The word itself means "to warn," and it is difficult to conceive of a time when signs and warnings did not play a part.

Advertising is as old as man, yes, as old as animate nature. The brightest plumed bird is first mated; the lion, whose roar strikes terror into the heart of his enemies is least molested and best fed. Philip of Macedon made the name of his phalanx a warning to other peoples and reaped conquest. Darius in publishing his might on the rocks at Behistun, used advertising to his everlasting fame. Ptolemy carved the Rosetta stone that will make his name known forever. Luther, knowing the value of courageous publicity, nailed his theses to the cathedral door. The word of mouth advertising given Napoleon made victory easy, saving much treasure and many men. Washington knew the value of reputation and fostered it. Lincoln at Gettysburg published to the world the greatness of his heart and made the conflict less harsh for the South.

Advertising is the heart and soul of business. The clean store, attractive window, orderly arrangement, complete stock, good quality, willingness to make exchanges or correct errors, prompt delivery, carefulness in accounts, all ask for more business. The doctor's genial greeting, his comfortable office, large case of instruments, evident patronage and prosperity ask why you are not his patient. The lawyer's large library and busy stenographer shout his success. Professional ethics forbid the use of printer's ink to increase business, but professional men welcome word of mouth advertising.

These forms of advertising are fundamental to business. No lasting traffic can be built without them. You are unconsciously advertising. If you believe in your business and know it to be honest, it pays to tell the people what you believe. The business man cannot be self-effacing. He must dominate. The political reformer who believes in himself and his remedy for social ills, gets nowhere until he tells the public and makes them believe.

It is easiest to follow the line of least resistance. The newspaper offers the least resistance to publicity. Have you ever tried it? Not tried at it but tried it out? Stuck to it until you began to feel the cumulative effects? How many buildings would Kodak occupy without the building power of printer's ink? Would phonographs sing at the world's dinner if newspaper space had not

pitched the key? Could Battle Creek serve the world's breakfast without white paper and black type?

Advertising is long range selling. Newspaper space talks to more people with less expense and the least effort. It multiplies your personality, enlarges your influence, lengthens your arm and augments your effect. An advertisement creates the desire to possess in the minds of hundreds at once. The personal sales depends on the right words and the evident sincerity of the seller. Just so the ad. Newspaper space is in general the best and cheapest of all advertising. By newspaper space I mean all periodicals.

I once heard the head of a great advertising agency liken the various kinds of advertising to the executive force of a railroad. Traffic Manager Trade Paper, Superintendent Specialty Advertising, Private Secretary Personal Letters, Highwayman Hand Bill, Section Boss Bill Board, Foreman Fence Signs, Walking Delegate Word of Mouth, all good, but the President, Chairman of the Board of Directors and General Manager is Newspaper Space.

To be satisfactory, space should be occupied regularly. Steady work brings results. Starting and stopping makes it harder to pull the load. You loose all the momentum gained by keeping under way. As well try to roof the house by putting on a few shingles occasionally.

How much space shall be occupied? Let us get at it this way. Suppose that you are doing \$10,000 a year. Two percent of that is \$200. There are two weekly papers published in the city. That allows \$100 for each paper. Then the rate may be ten cents an inch. That permits in round numbers twenty inches single column each week, or ten inches double column; that is quite a good space for most merchants to occupy, if it is used every issue. And for the man who is doing only \$10,000 a year it may seem large. But the cost of a year's advertising is small at two percent. It is easy and natural to spend more than that in unprofitable ways. Even one percent of the total business spent intelligently brings surprising results. Fixing a rate of ten cents an inch, I am supposing a circulation of about two thousand. Circulation is a delicate matter with most publishers. But the advertiser has as much right to know what he is buying at the newspaper office as the printer has when he goes to buy a suit of clothes or a ton of coal. I think that publishers who have foresight enough to make a reasonable rate to induce regular advertising show good merchandising sense.

Whatever amount of space you occupy, keep it all the time. For special occasions, increase it if necessary but never go below a minimum. Making a big effect and then falling back for breath does not look as if you had much force in reserve. People like a stayer. Feather by feather the goose is plucked. Who faints not, achieves.

Position is of great importance. If the regular publication of your ad is valuable, the same position is equally so. When you go to town you expect to find the butcher shop on the way, in the same place. You stop at your regular news stand for the morning paper and a cigar. If these were shifted around you would make no effort to find them. You would follow the line of least resistance. A good place for business suggests a good place for your business announcements. Get the best position in your paper if you can. Get a position that jumps out at the reader as soon as he sees the paper. Pay a little more if

you have to, just as you would pay more for a good corner store. Country publishers can learn much about the makeup of their papers from some of our great national weeklies or city dailies. Readers have some rights as well as advertisers and printers. And a regular plan of makeup with judicious mingling of reading matter and advertisement is fair to both classes. By that I mean, several center columns of reading matter with outside columns of advertisements. Or advertisements across the bottom and solid reading matter on the upper half of the page. By tactful and sensible separation of reading and advertisements, the printer can make every page of his weekly valuable to the advertiser. The confusion, disarray and jumble poured down the columns of many weeklies is not creditable to the country press. Social notes, settings of eggs, goings away, birth records, prize potatoes, spring millinery, church sociables and market topping hogs flow down the columns without thought of fitness or connection. Floating with the mass are advertisements of 2 percent money, \$1.98 coal, Tumber sells lumber. While printers are urging more advertising, they might better turn their gaze inward and make the appearance of their sheet ask for it by the look on its face.

A good position regularly occupied becomes as much a part of the reading matter in a paper as the news columns. If the copy is changed every week the readers of the paper look to see what you will say next. It is like a continued story. Your ad becomes interesting reading if you will permit it to. The publisher securing an advertiser who will furnish good copy each week, has in effect added a reporter to his staff at no cost to himself. For this reason the publisher can well afford to make a better price and should cheerfully set the ad each week. I recall a series of ads that were printed several years ago in the Kansas City Star. They were changed every day; they were jocular in vein, fitted each day to current topics. Worded in friendly, conversational style, they were full of personality and you felt that here was a man who was in full touch with his neighbors. That a man who kept so close to his city and friends must be a good man to sell you groceries. They always got down to business. Sometimes right at the start off. They simply must have sold lots of groceries. I read them as regularly as the front page, and they were printed on the inside last page.

The retailer in the small town knows most of his customers in person. For that reason he can talk in more friendly strain. He should be the personal friend of his trade and should make them feel his friendliness in his advertisements. Do not boast about "the tremendous power of cash," "mammoth purchase of train load of wrecked goods," "your great keenness in getting a bargain." Your banker sees the check, the freight agent collects the freight, the drayman hauls the goods. If you try to fool them, you will soon be known as an unreliable advertiser. Things promised are things due. Meet fully your advertising obligations.

Use good, plain English. The kind that is short, stout and sturdy. The kind that can stand on its feet and hold up a weight. Some men are unfortunately blessed with a large vocabulary. I sometimes read in our great state dailies, letters from a man thus unhappily blessed. He can use more words to say less than any writer I have ever read. His language is correct. It is rightly applied.

His words are chosen with delicate sense for nice shades of meaning. But in studying his language you forget what he is trying to say. "Examples may be heaped until they hide the precepts they were made to render plain." To illustrate my meaning more clearly, take the old proverb I have just quoted. Boil it down to "Don't bury him under explanations." That is five words that tell it all. The old saying contained fifteen.

Many years ago, Louis Kossuth, the great Hungarian liberator, was imprisoned. During his confinement he was furnished access to a splendid English library. After his liberation, he came to America. Wherever he went he was asked to give public addresses. His good, quaint, forceful language attracted attention. Knowing he was a native Hungarian, he was asked where he learned to speak English so well. He seemed surprised. "Why," he replied, "is that not the way you speak it? I never read but two English books in my life, Shakespeare and the Bible." The splendid English library he had read consisted of those two marvelous books. He had drunk of the purest and best. He had nothing to unlearn. Read them, study them, for language and precept. From Shakespeare, "Strong reasons make strong actions," "For neither a borrower nor lender he; for loan oft loses both itself and friend," "The tartness of his face sours ripe grapes." Do you recognize this from the sermon on the mount? "But when thou doest alms, let not thy left hand know what thy right hand doeth," "For where your treasure is, there will your heart be also." Listen to that mighty, little man, St. Paul, "A little leaven, leaveneth the whole lump," "If any man thinketh he hath whereof he might trust in the flesh, I more," "Prove all things, hold fast that which is good." A careful study of the Bible will not only improve your language, but modify your statements to a believable point. Rudyard Kipling, Emerson, Elbert Hubbard, all use strong English. Any book of old proverbs is full of short, simple sayings that are models of advertising brevity. "Grasp all—lose all," "Cheap is dear in the long run," "He is rich that is satisfied." Can you word these quotations that I have given and make them express as much with fewer words?

When asked how it was that he could get so close to the people, Roosevelt replied, "I am thinking just like him." If you can think just like the man who reads the ad, you will try to make it appeal to him. Space is valuable. If one dollar spent for space will sell ten dollars' worth, why spend two for the same end? If regular occupancy of small space will sell as much more, why spread yourself over more ground than you can well cover?

Put one idea before the customer. Let one idea stand out so distinctly that it makes a strong impression. The pages of most periodicals with national circulation are good text-books for the advertiser. Say something each week that will keep the reader looking for the next chapter. Many of you will remember a series some years ago of advertisements that began with a good story. Sometimes it ran for nearly a column. They were good stories, but they invariably wound up with the saving of life with a kidney cure. That was an extreme kind of advertising. But the principle was good. And the sale of this cure was tremendous as long as the stories were printed.

It is not necessary to have a large variety of stock to find a new subject each week. It would be easily possible to advertise one kind of writing paper or

burial casket until a man would not feel safe to die until he had written his will on that paper and would feel uncomfortable in any other casket. It is a mistake to shoot too many kinds of goods at the customer at one time. Even large department stores in the cities sometimes fill their space with such a lot of matter that it becomes a task to read it. With the smaller man in the country town, the simple ad that brings people to the store is the best tone to assume.

There is one quite important thing to keep in mind; the appearance of your ad. It should be set up with reference to its surroundings. On a street of white houses, the one painted a harmonizing shade of green or yellow would attract by its color. On a page of ads set up with all the type in the shop, the one in simple paragraph style would stand out distinctly. It is a good plan for each merchant to select his own style of type and use that exclusively for his ads. If the shop cannot furnish enough variety, buy your own type and border. Make your ad as characteristic as your face or your voice.

Keep an advertising book. Paste in it your own ads, dating them. As the seasons pass by, note the effect, record facts as to quality, use, source, special features, satisfaction, etc. In a year or two, you will have a valuable work of reference. Cut out such ads as appeal to you in other papers. They will be suggestive for your own use. It will not be long until you are writing good, strong copy that will bring business and assured income.

Do not overlook the psychology of advertising. The preacher who stands before his congregation cannot preach to the hearts of his hearers unless he feels what his lips utter. The teacher before his class reveals his character, though he may never give it a thought. The man who reads your ad reads your sincerity or insincerity between the lines. Time your utterances to the seasons; \$2.00 skates offered at \$1.98 in July would be a drug in the market. Panama hats in January would move slowly. Shamrock badges in a German settlement would be in small demand. But, when spring mellows the climate, it is opportune to sing about garden seeds, and garden tools. Early frost suggests woolen blankets, warm underwear and hard coal. Follow the line of least resistance.

Proper consideration of an advertising campaign brings some surprising conclusions. If I wish to increase my business by advertising, shall I be able to finish the sale after I have gotten the customer into my store? Will my assortment and prices appeal to him? Is the quality of my goods beyond criticism? Does my store have an attractive look? Will the tail wag the dog or the dog the tail? The finding of the proper answer to these questions has set many a merchant on the road to success. The chain of reasoning has hitched him to a dynamo and he has become a live wire, full of energy. Being absolutely honest in his publicity has compelled him to make his business fit his ads. An honest business, honestly advertised, is a worthy and serviceable part of society, whether the proprietor reaps only small annual profits or quickly acquires a competence.

DISCUSSION.

Mr. Bruce Philip, of California, led off in the discussion, and related a number of his experiences. He had tried advertising in a weekly newspaper, both by the coupon system and the advertisement of special things, but it was never satisfactory. Then he took the cue from the "story" form of advertising, and found that three or four lines of reading

matter brought results at once. He would use as a catch-word some striking event or matter prominent in the public mind at the time, such as a cloud-burst or candidacy for office, and the results had been very gratifying. Such advertising frequently made good.

Mr. Charles R. Sherman, of Omaha, thought that the question of what a catch-line should be for an advertisement was a mooted one, and he was not at all sure that a soothing-syrup advertisement should have a catch-line about a prospective Congressman or the last tornado. He had inclined of late years to the severely plain in advertising. The man who started his ads with a catch-phrase, "I cure fits" knew what he was about; his appeal was directly to the man who had fits, or to the parents or guardians of children thus affected. All they wanted to know was a remedy for fits—that was the all-absorbing question with them. Likewise, young couples who were the proud possessors of a baby two months old needed only the picture of a baby-carriage, or the headline "Baby-Carriages," to interest them, whereas such an ad would hardly appeal to an old maid, unless she was going to make a present of a baby-carriage. And so in the fall people were interested in the question of new hats; and this principle prevailed all along the line. The thing a man wanted to buy was the thing that he was interested in, the live topic with him, and all that was needed was the suggestion of having that thing for sale.

As to the question of whether a single-line drugstore could successfully compete with a department store, Mr. Sherman told of an unsuccessful effort made by a merchants' association in his city some years ago to make war on the department stores. Following Mr. Pease's advice, he had quoted Shakespeare to them, what Cassius said to his fellow conspirators:

"The fault, dear Brutus, is not in our stars,
But in ourselves, that we are underlings."

He had told one of the grocers that he had been to five stores to find Roquefort cheese, and finally thought of an ad he had seen of one of the big department stores, and went there and found it. He said he had had the "nerve" to tell these people that he did not believe a department store could run a better drugstore than he had, although they might have more money, for they were going to run it for profit; and if the man who ran the single-line store would wake up and observe the methods of the other fellow, he could make a profit, too. He was firmly convinced that the one-line store, properly managed, could do equally as well or better than the department store, with its forty lines of business to run. He admitted, of course, that one man could not afford to take up as much advertising space in the papers as a combination of forty or fifty men, and his advertising would have to be selected. The man on the outskirts of a city, for instance, could not afford to use space "where only three-fourths of the shots he fired came within range of any game."

Mr. Pease had considered it a fundamental principle of all advertising that the purchaser should know he would get what he expected when he went to a store, and goods of the right quality—which he was sure was the case with Mr. Sherman's five large stores in Omaha. There were hundreds of phases to the advertising business, and an infinity of suggestions could be made. His paper was directed solely to newspaper publicity. But he also firmly believed in the personal-letter system, and that of enclosing slips with every package that went out, sampling, and many other methods. These varying phases might be discussed for a week, and the subject not be exhausted. He had found catch-phrases to introduce an advertisement an excellent thing, as the promise of a "story" was always attractive, and the man who could coin phrases of that sort would get quick results.

Mr. Anderson said he had been very much impressed with the value of the paper just read, and noted particularly that Mr. Pease was a man who practiced what he preached, in that he had advertised his friend "Teddy" all the way through, along with his other wares and merchandise. One point in Mr. Pease's paper which appealed to him was the suggestion that it was not necessary for the retail druggist to lay out large sums of money in acquiring a knowledge of the fundamental principles of advertising. But while newspaper advertising, circularizing and such things as that were good and often brought excellent results, it should not be forgotten that there were druggists who were not in a position to take up this work, as their business was not large enough to justify it, and the results

would not warrant the expenditure—at least they felt that way about it. “They don’t take the first chance, in other words,” said Mr. Anderson.

Prof. W. C. Anderson, of Brooklyn, went on to say that he heartily commended Mr. Pease’s suggestions that one of the most effective ways to advertise was in the appearance of the store, the cleanliness and the service that was given. It was only natural for people to drift into a store that was well lighted and attractive inside. He thought there was no place in the world where things should be kept so thoroughly in order and present so inviting an appearance as the drugstore.

Commenting on Mr. Thompson’s paper,¹ Mr. Anderson heartily commended what he had said about the personality of the druggist, his conduct in his store and how he handled it, his ability to compound prescriptions, and the like. He related an instance in New York City to show that the personality of a druggist had been so impressed upon the people in his neighborhood that a “chain-store” in that locality had been forced to close out and quit business. He knew of like instances, where druggists who had been in business in their localities for twenty-five or thirty years, and had impressed their personality upon the people of their community, and who made it a point to call attention to the long time they had been in business there, the way they had served them, the reputation that they had with the physicians who sent their prescriptions to them in preference to other places, had forced these “chain-stores” to move out. His advice to the druggist who felt that he could not branch out into newspaper advertising was to keep in mind the cleanliness of his store, accuracy of service, and to impress his personality upon his customers.

Mr. G. C. Kendall, of Meridian, Miss., in this connection related some of his experiences. He lived in a town of some 25,000 population, where there were some fourteen or fifteen drugstores doing all kinds of advertising. As was generally known, there was a number of so-called “first-class” patent medicine concerns that would offer inducements to the live druggist to sell their goods. He was advertising now as the special agent of over twenty different houses. This enabled him to cut out newspaper advertising altogether. He had been spending some \$30 a month with the two daily papers in his city, and this scheme enabled him to save that. He had the agency for such patent-medicine concerns as Vinol, Rexall and Sage and Sulphur, which he regarded as the best propositions of this kind. In addition, he did run a one-inch ad in each paper, simply saying that “Every medicine advertised in this paper is for sale by Gus C. Kendall.” In this way, it mattered not to him what other druggists who had special preparations might advertise over their own names. He had calls for these articles almost as much as if he were directly advertising them, all by reason of this one-inch ad. The prescription department he left largely to other lines of advertising, such as the telephone directory, city directory, hotel cabinets, bill-boards and street cars. Mr. Kendall said that he spent pretty liberally of his profits in advertising, but in his opinion the best advertising a druggist could have in the prescription department was through the physician. He had a dozen physicians who used his prescription blanks exclusively, and it was well known that some people imagined they must go to the druggist whose name appeared on the prescription blank. Mr. Kendall went on to say how his business had grown in the last ten or twelve years, and admitted that he was more “peculiar” in his line of business than any man in his town. A marked peculiarity of his was, that he would not permit a soda fountain to come into his store. He said that he would not rent space to a soda fountain at any price, and would not run it himself under any circumstances. Also, not a pound of paint or a package of garden seed was sent out of his store. He said he believed in “shooting straight from the shoulder” in the matter of advertising, and when he advertised that his was the only *drug store* in the city of Meridian, he stated only a fact. He did not consider the soda dispenser a druggist, and neither was the man in the back room that put up paint a pharmacist—any woman or child could do that. He closed by saying that his idea of running a retail drug business was to specialize and be a druggist.

¹See Sept., 1912, Journal, page 970.

Contributed and Selected

PHYSIOLOGICAL ACTIVITY OF ACETIC FLUIDEXTRACT OF DIGITALIS.

W. A. PEARSON, PHILADELPHIA, PA.

Recently a lot of Acetic Fluidextract of Digitalis was returned to us with the statement that "it was of unsatisfactory physiological activity." From the records I found that the preparation had been made in 1912 from digitalis leaves which I had previously tested and found to be of satisfactory physiological activity.

Five cc. of the fluidextract were diluted to 50 cc. with physiological salt solution and various amounts of this dilution injected into eight different guinea pigs with the following results:

Pig No. 1, Weight 350 gm.

Injected—1.0 cc. of dilution (0.1 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 2, Weight 268 gm.

Injected—1.2 cc. of dilution (0.12 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 3, Weight 285 gm.

Injected—1.5 cc. of dilution (0.15 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 4, Weight 290 gm.

Injected—2.0 cc. of dilution (0.2 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 5, Weight 350 gm.

Injected—1.0 cc. of dilution (0.1 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 6, Weight 268 gm.

Injected—1.2 cc. of dilution (0.12 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 7, Weight 285 gm.

Injected—1.5 cc. of dilution (0.15 cc. of acetic fluidextract).

Result—No toxic action noted.

Pig No. 8, Weight 290 gm.

Injected—2.0 cc. of dilution (0.2 cc. of acetic fluidextract).

Result—No toxic action noted.

0.1 cc. of a fluidextract of Digitalis, U. S. P. (1.0 cc. of the 1-10 dilution) should kill a 250 gm. pig within two hours after the development of typical symptoms of digitalis poisoning. As there was some question if any acetic fluidextract of Digitalis would be of corresponding physiologic activity two fluidextracts were freshly prepared from the same ground digitalis leaves. One fluidextract was

made according to the U. S. P. method, the other with acetic acid. Each of these samples were diluted to ten volumes with physiological salt solution and injected into guinea pigs, with the following results:

Pig No. 9, Weight 280 gm.

Injected—1 cc. of dilution (0.1 cc. of acetic fluidextract).

Result—No action.

Pig No. 10, Weight 309 gm.

Injected—1.5 cc. of dilution (0.15 cc. of acetic fluidextract).

Result—No action.

Pig No. 11, Weight 233 gm.

Injected—2 cc. of dilution (0.2 cc. of acetic fluidextract).

Result—No action.

Pig No. 12, Weight 275 gm.

Injected—1 cc. of dilution (0.1 cc. of Fluidextract of Digitalis, U. S. P.)

Result—Salivation but pig did not die.

Pig No. 13, Weight 305 gm.

Injected—1.5 cc. of dilution (0.15 cc. of Fluidextract of Digitalis, U. S. P., made from leaves from store.)

Result—Convulsions, but pig did not die till next morning.

Pig No. 14, Weight 325 gm.

Injected—2 cc. of dilution (0.2 cc. of Fluidextract of Digitalis, U. S. P.)

Result—Severe convulsions. Dead in 30 minutes.

It may be readily seen from the results above that the acetic fluidextract of digitalis was markedly inferior in physiological activity to the U. S. P. product made from the same leaves.

In order to determine if the acetic fluidextract had any physiological activity, calcium carbonate and magnesium carbonate were shaken with a portion of the acetic fluid and after most of the effervescence had ceased the liquid was filtered. 1 cc. of this filtrate was now injected into a guinea pig which weighed 320 gm. No convulsions were noticed. Even salivation, frequent defecation and urination were not observed. The pig died after two days, but post mortem did not show heart in firm systole or blood vessels engorged.

Summary and Conclusion.

The physiological activity of acetic fluidextract of digitalis is undoubtedly markedly less than the fluidextract made by U. S. P. method. In all probability the glucosides are promptly broken down by the acetic acid.

LABORATORIES OF THE SMITH, KLINE AND FRENCH Co., Philadelphia, Pa.

A RECENT ADULTERANT OF MANACA.

FRED A. MILLER, INDIANAPOLIS, IND.

The supply of crude manaca on the drug markets of the United States, at the present time, consists largely of an unidentified adulterant or substitute. This form (Fig. II) has recently been noted in all samples examined in the proportions of from seventy-six to one hundred percent. It is claimed by importers



Fig. I



Fig. II

that this substitute is genuine manaca, and that the lighter color of the root is due to a difference of soils in which the drug grows. No significance is given the structural differences which are equally as manifest as that of color. Following is a comparison of manaca with the root noted:

Manaca root (Fig. I) varies in thickness from five to thirty mm. and in length from one dm. to one meter. Externally it is dark reddish-brown. The bark is thin, usually scaly or flaky, and adheres tightly to the wood. It is distinctly bitter. The wood is tough, hard, and of a reddish-yellow color. It is only slightly bitter. The wood is porous, the pores being scarcely visible under a hand lens. The medullary rays are few in number and only visible under a hand lens.

The substitute (Fig. II) varies in thickness from seven to twenty-five mm. and in length from one to four dm. Externally it is yellowish gray. The bark is twice as thick as that of manaca, not scaly or flaky, and separates readily from the wood. It is practically tasteless. The wood is fragile, slightly softer than that of manaca, and of a pale yellow color. The wood is tasteless. It is porous, the pores being distinctly visible under a hand lens. The medullary rays are numerous, and plainly visible.

DEPARTMENT OF BOTANY, ELI LILLY & COMPANY, Indianapolis, Ind.

SANTONINLESS SANTONICA.

CHARLES H. LA WALL, PH. G., PH. M., PHILADELPHIA, PA.

A specimen of santonica was recently submitted for examination and assay which, while it corresponds closely in appearance with the official santonica in most respects, showed some abnormal characteristics, and upon further examination was found to contain not more than traces of santonin.

The appearance of the drug was very favorable as to color and freshness. It was rather greener than the santonica commonly seen, and possessed an odor slightly different from the ordinary santonica odor and strongly suggestive of tansy. The microscopic examination showed it to be more tomentose than the drug usually is, and the oil glands were of a greenish color.

The drug was assayed by several methods. The method of the British Pharmacoposia of 1888, Katz's, and Thaeter's methods, all gave a small amount of a resinous residue which showed no signs of crystallizing, even after several days' standing, while several commercial specimens of the drug, one seven years old and the other much older, which were assayed simultaneously to test the accuracy of the method, showed 4.18 and 1.71 percent of crystallized santonin respectively.

Thinking that perhaps the drug had been partially exhausted of its santonin, the ether extract in the several samples was determined, and in the sample yielding no santonin it was found to be 18.6 percent, a figure intermediate between both of the other samples examined, and therefore to be regarded as normal and as a proof of the impossibility of its having been tampered with in any way, as by being exhausted.

It was found possible to apply one of the color tests of santonin directly to the drug with very satisfactory results as indicating the comparative santonin content and the consequent activity of the drug. This test is based on that of Pain (*Pharm. J.*, 1901, 67,131), and is as follows:

Place 0.5 gm. of santonica (whole or ground) in a test tube, add 5 cc. of spirit of nitrous ether and boil gently. No color should be developed or not more than a slight greenish yellow color due to the solvent action of the alcohol on the resins of the drug. Now add 10 drops of alcoholic potassium hydroxide solution and again boil. In an active drug a rose red color is developed in direct proportion to the amount of santonin present. In the sample under question, scarcely any color was noticeable at all, while the other samples gave results agreeing proportionately with the amount of santonin found by assaying.

The foregoing condition of a practically worthless drug with a fine physical appearance is not new, for it has long been known that physical appearance is not always a criterion of value. It is new, however, as regards santonica, which is usually judged on physical appearance only, and it is suggested that in the future purchasers of santonica apply the color test as being much simpler than the long and tedious process of assaying by any of the available methods. They would thus be enabled to reject a worthless drug in a few minutes. The assay can be applied later to such samples as show positive results by the color test. In this connection I would commend Thaeter's method (*Archiv. der Pharmacie*, Vol. 237, p. 626, and Vol. 238, p. 383), as the most satisfactory.

LIQUOR FERRI IODIDI.

GEORGE M. BERINGER, A. M., PH. M., CAMDEN, N. J.

The use of the Solution of Iron Iodide for the extemporaneous preparation of the syrup is undoubtedly increasing. The dispensing doctors and the druggists who are either "too busy" or "too lazy" to make syrup of iron iodide by the official process have willingly relegated to the manufacturer the preparation of the concentrated solution of ferrous iodide, and have thus curtailed their own practice of the art of pharmacy to the simple admixture of such a concentrated solution with syrup.

As long ago as 1888 this custom was sufficiently in vogue to be recognized by the National Formulary, and, in the first issue of that work in that year, a formula for *Liquor Ferri Iodidi* was included. The note accompanying that formula stated: "On mixing 1 volume of this solution of iodide of iron with 5 volumes of syrup, the product will contain about 60 grains of iodide of iron (ferrous) in each fluidounce, and will be practically, measure for measure, but not weight for weight, identical with the official syrup of iodide of iron."

It will be thus seen that the extemporaneous preparation of syrup of ferrous iodide in this way had, even at that time, the endorsement of a quasi legal authority.

In the third edition of the N. F., published in 1908, the formula has been retained. In the earlier copies of this edition the foot-note stated, "This solution

contains about 85 percent of ferrous iodide. On mixing 1 volume with 15 volumes of syrup (U. S. P.), the product will be practically identical with syrup of ferrous iodide (U. S. P.)" Subsequently, this wording was changed and in the later copies the note reads, "This solution contains about 81 percent of ferrous iodide. On mixing 1 volume with 11 volumes of syrup (U. S. P.), the product will be practically identical with syrup of ferrous iodide (U. S. P.)"

As a matter of fact, both of these statements are incorrect. The N. F. III formula is directed to yield 1000 cc. of product; if this be changed and the finished product made 1000 gm., then the solution will contain 81 percent of ferrous iodide.

The manufacturers have quite generally adopted for the solution of ferrous iodide a strength of sixteen times by volume that of the official syrup of iodide. That is, their labels direct that to prepare syrup iron iodide, 1 fluidounce of the liquor be mixed with 15 fluidounces of syrup. This is only another evidence that the American physicians, druggists and manufacturers persist in using the apothecaries' measure and think in its terms rather than in the decimal terms of the metric measure. The intent of the National Formulary evidently was to supply a formula for a preparation of the same strength as supplied in the trade.

Several other minor defects in the N. F. formula should be considered. The direction to filter the *boiling solution* of ferrous iodide through paper is a manipulative error that brings trouble. In my experience, hot solutions of ferrous iodide of the strength directed invariably eat right through paper filters, even if of several thicknesses. Either the solution has to be diluted greatly or cooled before filtering through paper, or else the hot solution must be filtered through glass wool or asbestos wool, returning the first portion of the filtrate until it comes through clear.

The amount of hypophosphorous acid directed to be used in the formula is not the equivalent of that directed as a preservative in the official formula for the syrup. Consequently, the solution is prone to undergo change if kept in bottles that are opened frequently, as is apt to be the case. Hence, the solution should be preserved in small glass stoppered bottles, which should be completely filled and kept tightly stoppered.

The proposition has now been made that the U. S. P. IX should direct that syrup of ferrous iodide be prepared from a concentrated liquor, and, consequently, a formula for a concentrated solution of ferrous iodide will have to be adopted as a new admission in the Pharmacopoeia. Our concern is, that the most satisfactory formula be adopted.

The value of glycerin as a preservative for solutions of iron salts has long been recognized by the practical pharmacists and the manufacturers of the various solutions of ferrous salts. As early as 1857, J. C. Leaming (Proceedings, A. Ph. A.), proposed the use of glycerin as a preservative for solution of ferrous iodide, and in the year following, Henry Thayer (American Journal of Pharmacy, 1858, page 390), proposed that the ferrous iodide should be prepared or formed in the presence of glycerin. At the semi-centennial celebration of the A. Ph. A. in 1902, there was on exhibition a sample of glycerole of ferrous iodide made by Prof. William Procter, Jr., January 15, 1865, and although at that time more than thirty-seven years old, it was in an excellent state of preservation.

It is to be remembered that the title liquor ferri iodidi in those early days was applied to an entirely different preparation from what we are now designating under the same title. The solutions of that period were much weaker and were commonly preserved with glycerin, honey or sugar, and these preceded and were displaced by the formula for syrup of ferrous iodide, which was subsequently made official. The value of glycerin as a preservative for ferrous salts, and likewise of iodide solutions, is now fully recognized. Its use is proposed in the pharmacopoeial formulas for diluted hydriodic acid and for the syrup of hydriodic acid, and likewise in a number of the N. F. formulas for elixir containing iron salts. I have found it of value as a preservative in iron iodide solutions and in the formula submitted herewith, it is used along with hypophosphorous acid in proper amount to render the solution permanent. In this concentrated solution of iron iodide the glycerin serves another useful purpose, namely, it prevents the crystallizing out of the salt, thus assuring solution.

The following formula is submitted for a concentrated solution of iron iodide of such a strength that one volume diluted with fifteen volumes of syrup will produce a syrup of ferrous iodide practically identical in strength with the syrup of ferrous iodide now official. The strength of 1 in 16 has been retained, because of its present extensive use and likewise to maintain the legal standard of much of the solution of iron iodide that is already in commerce.

LIQUOR FERRI IODIDI.

Solution of Ferrous Iodide.

An aqueous solution containing 107.8 Gm. of Ferrous Iodide (Fe. I ₂ =309.69) in each 100 Cc.	
Iron, in the form of fine, bright wire, cut into small pieces.....	250 Gm.
Iodine	881 Gm.
Hypophosphorous Acid (50%).....	85 Cc.
(if 30% acid be used) then use.....	110 Cc.
Glycerin	100 Cc.
Distilled Water, a sufficient quantity	
To make one thousand cubic centimeters.....	1000 Cc.

To the iron, contained in a flat-bottomed flask, add 1000 cc. of distilled water, then gradually add the iodine, keeping the temperature down by setting the flask in a vessel of cold water. When the iodine has all been added, allow the mixture to stand for 12 hours, then heat to boiling until the clear liquid is of a bright green color. Then *cool* the solution and filter through a double filter paper and wash the flask and iron residue with several portions of distilled water and pass the washings through the filter. Add the glycerin to the filtered solution and rapidly evaporate in a porcelain dish on a sand bath to about 850 cc. Allow the solution to cool to 90° C., then add the hypophosphorous acid; mix thoroughly and when cool add sufficient distilled water to make 1000 cc.

The finished product should be kept in small glass-stoppered bottles entirely filled. It is an emerald green liquid, specific gravity about 1.9 (actual determination of product gave 1.906).

Syrup of ferrous iodide made by diluting 1 volume of this liquid with 15 volumes of syrup (U. S. P.), showed a specific gravity of 1.35, thus practically tallying with the U. S. P. statement for specific gravity of the syrup of iron iodide, and maintaining it of the International Standard of 5 percent of ferrous iodide.

In the above formula, the hypophosphorous acid is advisedly directed to be

added to the concentrated iodide solution after it has been allowed to cool to 90° C. If it is added to the iron iodide solution before concentration, the hypophosphorous acid is more or less decomposed. The Pharmacopoeia states that hypophosphorous acid begins to decompose between 130-140° C. The decomposition appears to commence below this temperature and in experiments where it was added to the solution before evaporation, the decomposition was quite marked. If the manipulation be changed and the hypophosphorous acid added before concentration, then the evaporation must be done on a water-bath.

A LABEL VARNISH SUBSTITUTE.

C. B. BURNSIDE, IOWA CITY, IOWA.

The ordinary label varnish is quite unsatisfactory in appearance and application. Labels may be made water and acid proof by the application of a saturated solution of solid white paraffin in petroleum ether of boiling point from 40 to 50 degrees Centigrade. The process consists in simply touching the label with a small piece of cotton saturated with the solution. The petroleum ether evaporates almost instantly, leaving an invisible coating of paraffin which retains the new lustre of the label as well as making it water and acid proof.

INFLUENCE OF CLIMATE ON VARIOUS CHEMICALS.

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A knowledge of the chemical and physical properties of the various compounds of the materia medica constitutes a prerequisite of qualification of the professional pharmacist. To this must be supplemented an adequate knowledge of the best methods to be employed for their preservation, and as a rule, the educated pharmacist becomes very skillful as the years pass and his experience is extended.

The manufacturing chemist, however, occupies a somewhat different position in that, no matter with what scrupulous care his products are made, they are distributed over a wide domain, and are subjected to variations of climate which

affect more or less their stability, and as frequently happens, in deference to his judgment, the container is apt to be accepted by the purchaser, as the one best adapted to the preservation of its contents.

The knowledge and technical skill of the chemist is profound. He must be a mathematician, a skillful physicist, and be possessed of an extensive knowledge of chemical compounds, and yet, in spite of this acknowledged ability, there sometimes appear seeming incongruities.

The chief of these is the character of the container which he employs for the transportation of his products. These are frequently of doubtful sufficiency, in view of the wide range of climate conditions which prevail within the borders of the United States alone, to say nothing of its territories and the foreign countries which may be their destination.

The writer recently expressed himself to this effect to a prominent manufacturing chemist, and was informed by him that the container was very often a matter of selection upon the part of the buyer, and supported his statement by exhibiting a list of chemicals, some of which were very expensive, and all of them susceptible of change upon exposure. These, he further stated, were ordered to be packed in paper cartons, and that he was compelled to comply with this commercial requirement, or lose the business.

Of course, there is involved in this both a moral responsibility to the public, and a professional pride, which we will not discuss.

That he had a knowledge of the possible influence of climate, goes without saying. That he had an adequate conception of the magnitude of those influences as manifested within the area of our own country alone, is doubtful.

The object of this paper, however, is not to discuss the container nor the responsibility of the manufacturer for his products after they are shipped, but rather to call attention to conditions which exist, and which are constantly affecting the stability of many substances destined for medicinal use, thereby causing them to *no longer respond to the requirements of the Purity Rubric of the United States Pharmacopoeia*—and further, to suggest the establishment of a systematic research, which shall have for its object the investigation of the prevailing climatic conditions in given areas, and their influence upon various chemical compounds.

Such a research could not be conducted properly by a single individual, but would require the cooperation of a number of men distributed over a wide territory, working simultaneously, with the same compounds, and using the same physical measurements.

It need not be expensive, nor take a great length of time. The data collected and finally tabulated, would be of interest and serve as a guide to the pharmacist, and be of economic value to the manufacturer and jobber.

Chemicals Affected. The limits of this paper will not permit of the enumeration of a great number of chemicals, and we shall therefore confine ourselves to the consideration of a few which may be regarded as typical—later on we shall specify the chief physical or rather meteorological influences which are constantly at work in effecting their undoing.

The chemist who has resided at sea level all his life, whose experiences have been exclusively along the coast states, and accustomed to making his observations

in an atmosphere almost constantly at the point of saturation, with respect to atmospheric moisture, has but a vague idea of the conditions which his products are destined to encounter.

In the case of polyhydrated salts, or those which contain a large number of molecules of water of crystallization, he knows by theory, that they are susceptible of efflorescence, but as to the magnitude of the possible loss in weight of water, he has absolutely no definite knowledge.

Owing to the vast extent of the area of the United States, chemicals are variously affected in widely separated sections, and consequently the physical properties described by the manufacturer do not permanently or uniformly apply.

Strontium bromide is sometimes described by eastern chemists as a very deliquescent salt, while here in Denver, the Rocky Mountain region, and upon the arid plains as far east as the Missouri River, it is practically a permanent crystalline body.

Along the sea board, chloral hydrate is difficult to dispense, and moisture is so rapidly absorbed as to wet the paper while in the act of weighing. At Denver we have no such experience, and it may be of interest to the reader to know that the writer has dispensed this salt in powdered form enclosed in ordinary powder paper.

To open a bottle of zinc chloride along the coast and expose its contents but for a few minutes, is equivalent to reducing the salt to the liquid state. At Denver the bottle may be repeatedly opened and the contents will retain their granular structure for a long time.

The isometric salts, magnesium sulphate and zinc sulphate, both containing 7 molecules of water of crystallization, lose their beautiful prismatic structure, and ultimately fall to an amorphous powder, in this section of the country. Copper sulphate, sodium carbonate and sodium borate are all similarly affected here. My recollection of the far East is that, with the exception of sodium carbonate, these salts were never seen in any other condition than their normal geometric triclinic and monoclinic forms.

Among the volatile salts, ammonium carbonate requires special care in all parts of the country, in order to avoid the loss of its basic gaseous content, and the consequent change in its chemical nature.

At this point, Denver, sodium phosphate will lose 5 molecules of its water of crystallization or 25 percent; sodium carbonate, containing 10 molecules, will lose 5 molecules or 31 percent of their molecular weights.

It must be understood that we are speaking of chemicals destined for chemical and medicinal use, and not the heavy drugs intended for industrial purposes. A chemist would have no difficulty in taking any of the substances named, which had been subjected to the changes spoken of, and to make his solutions by the methods of standardization employed in such cases.

The pharmacist and druggist, on the other hand, is called upon to furnish substances conforming to the Purity Rubric of the United States Pharmacopœia, and must therefore depend implicitly upon his manufacturer.

A normal volumetric solution whose saline content includes a basic element which is the chemical equivalent of one, two or three replaceable hydrogen atoms

of an acid, could not be prepared by taking the molecular, or the fractional molecular weight of a salt that had lost from 20 to 30 percent of its water of crystallization. It is for this reason that the Purity Rubric of the U. S. P. directs "carefully selected crystals showing no trace of efflorescence or adhering moisture."

We now come to the consideration of the influences which are at work; they are few but potent.

Temperature. Latitude plays an important part in governing the temperature of a restricted territory, but it will be noticed that the isothermal lines delineated upon the maps issued by the United States Weather Bureau vary greatly from day to day, owing to atmospheric disturbances which sometimes cover a wide area.

Atmospheric Pressure. Barometric depression varies but slightly and within narrow limits at any given point; it is nevertheless powerful in its effects.

At sea level the barometer stands at about 30 inches or 760 mm. When you reach the Missouri River traveling west and arrive at the great American plains, there is a gradual increment of altitude as you approach the Rocky Mountain region, which is accompanied by a decrease in pressure amounting approximately to one inch of barometric depression for every 900 feet of elevation.

For example, the difference between the altitudes of Kansas City and the city of Denver is about 5000 feet. The barometric depression would, therefore, be about 5.5 inches, making the barometric depression at Denver 24.5 inches.

The difference between Kansas City and Leadville, Colo., is 10,000 feet, or nearly two miles in elevation, making the barometric depression at the latter point about 18.7 inches.

The difference of elevation between Kansas City and the summit of Pike's Peak is about 14,000 feet or a barometric depression of about 14.5 inches.

The physical effect of this partial pressure is to decrease the boiling point of water, and consequently to *increase* the rapidity of evaporation, especially in the absence of atmospheric moisture, a condition which is almost constant at Denver and vicinity. This tendency to evaporation is the chief cause of the instability of efflorescent salts to which we have referred.

Atmospheric Moisture or Vapor Tension. This varies from 0 to 100 percent.

The atmosphere is said to be saturated when it contains 100 percent of aqueous vapor, and if there be a decrease in temperature, will be manifested by precipitation either in the form of dew, rain, hail or snow. An atmosphere laden with moisture is favorable to the stability of efflorescent salts, while the reverse is true with respect to deliquescent salts.

Temperature, pressure and atmospheric moisture are the chief influences; the remaining two, electrical potential of the air, and gaseous content, need not be further considered, except with respect to the numerical value which they take as factors in the possible combinations of meteorological conditions, which we will now endeavor to show.

Magnitude of Meteorological Influences. There are eight influences which constitute the fundamental data of meteorological science, five only of these are available in the matter under discussion as affecting chemical compounds; these we have already named.

Our problem is therefore resolved into the question: How many combinations

of these influences are possible to exist at any moment of time within the area of the United States?

Here $n=8$; $r=3$; then, $n-r+1=4$.

Employing the general formula for combination,

$$\frac{n(n-1)(n-2)\dots(n-r+1)}{r!};$$

$$\text{Or } \frac{8 \times 7 \times 6 \times 5 \times 4}{1 \times 2 \times 3 \times 4 \times 5} = 56 \text{ possible combinations.}$$

And if the variations of temperature from 10 degrees Fahr., and atmospheric moisture from 0 to 100 percent, were extended through the twenty-four hours of the day, and included in our calculation, the number of permutations and combinations would reach an inconceivable number.

While there may be no perceptible change effected by these minute variations, their influences are nevertheless constantly at work, seeking to break down the molecular structure of chemical compounds.

Heat, for example, is most effective in releasing the gaseous NH_3 and CO_2 from Ammonium Carbonate, causing that compound to lose its characteristic translucent appearance and take on that of an opaque body, changed in its chemical constitution from a carbonate to a bicarbonate.

What has been written in the preceding pages contains the elements of an important research—its magnitude precludes the possibility of individual achievement, and its successful accomplishment will depend upon the cooperation of a number of qualified men, willing to work.

ON CRYSTALLINE KOMBE'-STROPHANTHIN.

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Commercial *Strophanthus Kombe* seed has frequently been found to contain seeds of different *Strophanthus* species. Mr. E. M. Holmes, F. L. S., the curator of the museum of the Pharmaceutical Society of London observes,¹ "The *Strophanthus* leaves on the table were presented to the society's Herbarium some months ago by Mr. Lindsay, the curator of the Edinburgh Botanical Garden. They had been grown from some of the seed, used by Professor Fraser, apparently the greenish brown kind. These leaves differed considerably from those specimens of *Strophanthus Kombe* in the Kew Herbarium, so that it appeared, they were derived from a hairy leaved species, resembling *Strophanthus hispidus*, but not identical with it."

Twenty-two Kg. *Strophanthus Kombe* fruit (seed in pods) in very good condition were identified by Mr. Holmes of London as true *Strophanthus Kombe* Oliv. seeds. This statement is of great value, as there are more than twenty-nine

¹The Pharmaceutical Journal and Trans., 1887, 17, p. 754 and p. 755, also 1889, 20, p. 335.

species of *Strophanthus*.² The chemistry of *Strophanthus* seed Kombe and in particular that of strophanthin is in an uncertain state due possibly to the fact that the strophanthin under examination was prepared from seeds other than the Kombe species, but generally to other causes, as will be shown. Commercial strophanthins vary considerably in their chemical reaction as well as their physiological activity.

To clear up these uncertainties and to determine whether a strophanthin of constant chemical, physical and physiological properties can be prepared, is the object of the experiments described in this paper. It includes also a summary of the most interesting work done on strophanthin and the methods for its preparation used by the different investigators with an account of the origin and characteristics of the seed used. A complete list of the chemical literature on Kombe-strophanthin (including gratus-strophanthin or ouabain³ and hispidus strophanthin) is given at the end of the communication.

Fraser⁴ was the first investigator to obtain an active principle which he called strophanthin from *Strophanthus* seed.

Some of the seeds, which Fraser used, were of a species resembling *Strophanthus hispidus*, but not identical with it.

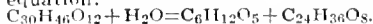
Fraser's method for obtaining strophanthin was changed several times. The first process on which he based the second one is not accurately reported, as pointed out by Gerrard⁵. The first process seems to have been an extraction with alcohol, and a precipitation of the active principle with ether. The second process is as follows: The ether precipitate obtained in the earlier process is dissolved in water, tannic acid is added and then digested with recently precipitated oxide of lead. The digested material is extracted with alcohol and the solution precipitated by ether. The precipitate is finally dissolved in weak alcohol and through this solution carbon dioxide is passed for *several hours*, by which means the lead is completely removed. After filtration, the solution is evaporated at a low temperature and dried in vacuo over sulphuric acid.

The third process is the following: The powdered seeds were extracted with sulfuric ether, afterwards with 20 times their weight of rectified spirit. The spirit was distilled off. The active principle was precipitated by a solution of tannin from a strong solution of the extract in water; the well washed tannate was thoroughly mixed with recently precipitated, carefully washed and moist

²Holmes, *The Pharmac. Journal and Trans.*, 1893, 23, p. 868 and p. 927.

Hartwich, *Archiv. der Pharm.*, 1892, 230, p. 401.

³The following is a quotation from a publication of Hatcher and Bailey: "The clinical use of *Strophanthus*" in the *Journal of the American Medical Association* (Vol. 55, 1910, p. 1698). "Even such closely related bodies as strophanthin and crystalline ouabain, strophanthin being methyl-ouabain, show different ratios of activity by subcutaneous and intravenous injections into the cat—" Because Strophanthin of the Pharmacopoeia of the U. S. is Kombe strophanthin, we are sure that their statement cannot be true. As far as our knowledge goes about ouabain (or gratus strophanthin) this body has the formula $C_{30}H_{46}O_{12} + 9H_2O$, and it is hydrolyzed according to the equation:



$C_6H_{12}O_5$ being rhamnose anhydride (Arnaud, *Comptes rendus* 125 (1898), p. 1208). By the work of Feist, which is confirmed in this work, we know that Kombe-strophanthin is hydrolyzed to strophanthidin of the formula $C_{27}H_{38}O_7$. Without saying more about the properties of the cleavage product of ouabain (or gratus-strophanthin) it will be clear that the statement that "Kombe strophanthin is methyl-ouabain," which is to be found in literature (Arnaud, *Comptes rendus* 107, 1888, p. 179, also Kohn and Kullsch *Monatshette* 19, 1898, S. 385), cannot be true.

⁴*The Pharmaceutical Jour. and Trans.*, 1873, 3, p. 523, 1887, 18, p. 69, 1889, 20, p. 206 and p. 328.

⁵*The Pharmac. Jour. and Trans.*, 1887, 17, p. 923.

oxide of lead, which was added in a quantity calculated to be necessary for the conversion of the tannin into tannate of lead; the mixture was digested for several days at a low temperature, and after it had been dried, it was thoroughly exhausted with alcohol. The alcoholic solution was generally evaporated to a syrupy consistence and repeatedly treated with oxide of lead until every trace of tannin had been removed. The product was now dissolved in dilute alcohol and any sediment removed by filtration, and through the clear and usually almost colorless solution a gentle stream of well-washed carbonic acid was passed *for two or three days*⁶ in order to remove traces of lead. The solution was then evaporated to dryness, and the residue dissolved in alcohol and filtered. Ether was added to the filtrate to precipitate the active principle. The precipitate was dissolved in absolute alcohol, which usually left a further slight sediment and the clear alcoholic solution was finally dried by being placed in a partial vacuum over sulphuric acid. Strophanthin thus obtained is a colorless opaque and brittle substance, which, under the microscope is found to consist of minute irregular crystalline plates. Strophanthin is intensely bitter and in solution in water or alcohol *is acid in reaction*. It melts at a temperature of (343° F.) 173° C. It burns without leaving a residue and contains no nitrogen. Strophanthin is decomposed by dilute acids yielding crystalline strophanthidin, and a syrup, (acc. to Fraser glucose), which reduces Fehling's solution. The results of the combustion and its reaction with H_2SO_4 will be given later in the table.

Arnaud. The communication of *Arnaud*⁷ is short yet interesting for our purpose; (a translation of the chemical part is as follows): The *Strophanthus Kombe* seeds in very good condition were furnished by Thomas Christy of London. The following is the method of preparation. The seeds pulverized in the mill are extracted, using a reflux condenser with boiling 70% alcohol. After boiling some hours, the extraction is completed in a percolator. The alcoholic fluids are distilled on the waterbath to remove most of the alcohol, the distillation being finished in vacuo, leaving a certain amount of fluid. The oil floating on the top of the cooled extract is separated and the remaining fluid filtered. A small amount of a mixture of subacetate of lead and finely-powdered litharge is added, heated on the waterbath and filtered after cooling. The lead in solution is eliminated by hydrogensulphide and the clear fluid is concentrated at 50° to a thin extract. In twenty-four hours strophanthin will crystallize out. The crystals are filtered off, keeping the temperature at 50°. If the fluid is not too concentrated, the syrup can be separated by filtering and by placing the crystals on unglazed porcelain. The crystals can be purified by recrystallizing several times from *boiling water*.

The yield of crystallized *Kombe-strophanthin* is 4.5 gm. from 1 Kg. of seed, but a part of the strophanthin is kept in solution in the syrup. It is perhaps possible to recover this strophanthin by making the tannate.

Properties. Strophanthin is a white substance, very bitter, crystallizes in brilliant crystals grouped around a center of micaceous appearance, resembling cadmium iodide especially when suspended in water. These crystals are very porous

⁶Compare the preceding process.

⁷Comptes rendus, 1888, 107, p. 179.

and hold the water back easily. Strophanthin⁸ forms a hydrate, which melts below 100° and loses its water in vacuum. By trying to recrystallize it, we find that the substance has become uncrystallizable, but if the substance is completely dehydrated in vacuo, it can be heated to 110° without alteration.

Strophanthin gives no residue when burned in the air. It has no sharp melting point, but softens at 165°, losing its opaqueness and quickly becoming brown. It acts on polarized light in watery solution (concentration 2.3%); (α)D₂₀ = +30°.

Cold water dissolves strophanthin slightly, 1 part to 43 parts of water 18° C. It is readily soluble in alcohol. It separates out of alcohol as a resin. It is insoluble in sulphuric ether, carbon disulphide and petroleum ether. Tannic acid precipitates it out of water solution. Strophanthin does not contain nitrogen. (The results of the combustion will be given in the table.)

*Leopold Kohn and Victor Kulisch*⁹. The seeds used by these authors to prepare strophanthin were examined by Hartwich, who declared the seeds to be identical with, or at least closely resembling the seeds used to prepare the strophanthin with which Feist made his experiments and which were said to be Kombe seed.

The strophanthin of Kohn and Kulisch was compared with the strophanthin of Merck, which was prepared from hispidus seed. The preparations were found to be identical.

The method of preparation of Kohn and Kulisch is the same as that of Arnaud. The seeds were freed from comose hair and pounded, extracted in a Soxhlet apparatus with petroleum ether to remove the fatty oil, afterwards dried and is washed until the acid reaction disappears and is recrystallized several times then extracted with 70% alcohol. The filtered alcoholic extracts were precipitated with basic lead acetate and lead hydroxide and filtered. The filtrate was treated with hydrogen sulphide and filtered again. From the filtrate concentrated in vacuo the strophanthin separates out. Recrystallization from water proved to be the best method for purifying the product.

Properties. Under the microscope the preparation shows crystalline structure. It is white, of neutral reaction and does not contain nitrogen. It does not reduce Fehling's solution in the cold or by heating and is optically inactive or slightly levorotatory. Strophanthin is very hygroscopic. The water is hard to remove from strophanthin, which melts at 100° C. It is not easy to determine the melting point of strophanthin, the mean of several estimations for the carefully dried strophanthin is 179° C. (The results of combustion, other estimations and adopted formula of strophanthin will be compared later on in a table.)

When strophanthin is boiled with diluted acids a new insoluble crystalline body *strophanthidin* is formed and the filtrate reduces Fehling's solution.

Melting point, etc. (see table). The method of preparation of strophanthidin is as follows: 10 gm. strophanthin were dissolved in 200 cc. water and heated with 20 cc. HCl of spec. grav. 1.12 in a large flask with reflux condenser. When the fluid starts to boil the impure strophanthidin separates in fine yellow flakes. After heating fifteen minutes the fluid is cooled and filtered. The strophanthidin

⁸The following is interesting as will be shown afterwards.

⁹Berichte 31, p. 514, and Monatshefte f. chemie, 19, p. 385.

from hot alcohol. The final product appears in the form of fine white silky needles. Strophanthidin cannot be dried at 100° , as it is decomposed at this temperature.

Kohn and Kulisch also prepared strophanthidin by the method which Hardy and Gallois¹⁰ used to prepare their "Strophanthin." The seeds were extracted with hydrochloric acid containing alcohol (1 part HCl in 10 parts alcohol). The filtered extract was diluted with water and evaporated until strophanthidin separated out. The filtered, well-washed sediment was recrystallized three times out of alcohol and gave pure white silky crystals, which proved to be identical with strophanthidin, prepared from strophanthin.

Feist¹¹ did not prepare strophanthin himself. The strophanthin used by Feist for his investigations was prepared by Boehringer and Sons (Waldhof) from Kombe Strophanthus seed by Fraser's process,¹² also a preparation of Schuchardt out of hispidus seed was found to be identical with the former preparation.

Properties. Strophanthin forms a fine white powder with a crystalline structure, or a brittle mass when obtained by evaporating a watery solution. It does not contain nitrogen and does not reduce Fehling's solution in the cold or by heating. It contains water in varying amounts. One cannot say whether the water is that of absorption or of crystallization. Feist gives the result of only one estimation: dried at 110° 7.48% H_2O . For the results of combustion and other data, see table.

Strophanthin was hydrolized with five times its weight of half percent hydrochloric acid. The flask was placed in a cold waterbath, and slowly heated. At 30° it was all dissolved and at $70-75^{\circ}$ strophanthidin separated in small needles. After having kept the fluid some time at $75-80^{\circ}$ it was cooled and filtered. The strophanthidin washed with a little sulphuric ether forms a white crystalline powder. The filtrate from the strophanthidin heated again at $75-80^{\circ}$ separates out only a very small amount of the same product. Boiling the fluid gives very poor results, because resins are formed. Strophanthidin contains two molecules of water of crystallization. By drying only one and one-half molecules can be driven off.

The water-free strophanthidin was prepared by recrystallizing several times from methylalcohol. A crystalline substance was thus obtained, consisting of one molecule strophanthidin and one molecule of methylalcohol. By drying this substance at 100° water-free strophanthidin was obtained. Strophanthidin hydrate melts at $169-170^{\circ}$, foaming at 176° , solidifying by cooling and melting again at 232° . The hydrate was examined optically and the crystals measured by Riva. The crystals are found to be monoclinic hemimorph. (See table).

By studying the action of alkalis on strophanthidin Feist determined that strophanthidin is a dilacton $OHC_{25}H_{37}O_2$ $\begin{matrix} \diagup CO-O \diagdown \\ \diagdown CO-O \diagup \end{matrix}$. By the action of alkali on strophanthidin a salt of a dibasic acid is formed. By acidulating the solution of this salt and boiling, the original dilacton is not formed again, but *another lacton*, therefore, at least one OH is also present.

¹⁰Journal de Pharm., 1877, 25, p. 177, nearly the same in Comptes rendus 84, p. 261.

¹¹Berichte 31, p. 534, 33, p. 2063 and p. 2069 and p. 2091.

¹²See the preceding abstract concerning the examination of the seed by Prof. Hartwich.

The second cleavage of strophanthin, *strophantobiose methyl-ether*, was separated from the filtrate of strophanthidin. The combustion and the molecular weight estimation lead to the formula $C_{13}H_{24}O_{16}$. Strophantobiose-methylether was hydrolyzed by 1% sulphuric acid. In the fluid, resulting from this reaction, mannose was identified by the hydrazone and the osazon; rhamnose by the p-nitrophenyl rhamnosazon and by distilling the strophantobiosid with 30% sulphuric acid under which circumstances methylfurfurol is formed. Methylalcohol was identified by making a methoxyl estimation in strophantobiose-methylether. We are surprised that with the skill of Feist, the rhamnose was not obtained as a crystalline substance, as rhamnose crystallizes readily.

*Heffter and Sachs*¹³. Our investigations on the active principles of Kombe *Strophanthus* seed were already practically finished when the work of Heffter and Sachs appeared. Fortunately the publication of this paper was postponed so that we are able to incorporate the data of Heffter and Sachs. Their work is of especial importance to us as they studied the active principles of identified hispidus seed and unidentified Kombe seed, whereas we studied the active principles of identified Kombe seed and unidentified hispidus seed. The concordant results indicate that hispidus and Kombe seed, which are on the market are pure or that if they contain other species, these species do not contain other active principles.

Heffter and Sachs used for the preparation of strophanthin the method of Thoms (Berichte 31, p. 271). The fat free powdered identified *Strophanthus* Hispidus seeds were exhausted with hot 94% alcohol. The alcohol was distilled off and the residue taken up with hot water. To the slightly acid, colored, turbid solution lead acetate in excess was added. Hydrogensulphide was passed through the filtrate in order to remove the lead, calcium carbonate in excess was added to the clear and nearly colorless acid solution and evaporated on the waterbath to a thin syrup and filtered. The strophanthin was at last salted out by a large amount of ammonium sulphate, and the strophanthin obtained was further purified by repeated extraction with 94% alcohol and at last by precipitating from the absolute alcoholic solution with ether. In this way a yield of about 1.7% pure amorphous hispidus strophanthin was obtained. Kombe *Strophanthus* seed obtained in the open market gave 0.4-0.5% of crystalline Kombe strophanthin (which separated by evaporating the solution with calcium carbonate) and gave further an amorphous strophanthin, which was found to be apparently identical with amorphous hispidus strophanthin.

The figures of the analyses of these strophanthins obtained by Heffter and Sachs are compared in the table.

It is worth noting that Heffter and Sachs, using the modified method of Fromme (Hager's Handbuch der pharmac. Praxis Ergaenz band S. 609, 1908), for the quantitative strophanthidin determination, obtained values higher than ours, and probably nearer the theoretical.

OUR OWN RESEARCH.

Twenty-two Kg. *Strophanthus* Kombe seed in pods¹⁴ gave 8.2 Kgs. seed (37.3%), 8.1 Kg. pods (36.8%), and 4.7 Kg. comose hair¹⁵. Helbing¹⁶ who

¹³Biochemische Zeitschrift 40 (1912), p. 83.

separated five pods gives the average; seeds, 37.36% pods, 37.61%—hairs, 25.02%. The 8.1 Kgs. seed were ground to a coarse powder¹⁷ and extracted in a percolator with petroleum ether, to remove the fat. The yield was 5.6 Kg. fat free powder and 2.5 Kg. green fatty oil (30.9%). Fraser¹⁸ found 31.8% petroleum ether extract; 1.5 Kg. seed were twice percolated with 12 liters of 70% alcohol each time.¹⁹ The alcohol of the first percolation was distilled off in vacuo. The thin extract, after standing a few days deposited *crystals* of *strophanthin* which were suctioned off on a hardened filter. These crystals were recrystallized several times by dissolving in as little boiling water as possible and evaporating the solution at about 40°. By constant stirring at this temperature fine crystals were obtained, but the yield of crystalline strophanthin becomes smaller by every recrystallization., e. g., 5 gm. pure crystalline strophanthin was recrystallized in this way and gave only 2 gm. crystalline strophanthin and 3 gm. of a white amorphous substance. The amorphous substance is more readily soluble in water than the crystalline strophanthin.

While the crystalline strophanthin is *neutral*, the amorphous substance is in an aqueous solution *acid* in reaction. As will be shown later the estimation of the water of crystallization and the combustion of the crystalline strophanthin give figures, which agree with the calculated figures for the formula $C_{40}H_{56}O_{15} + 3H_2O$, while the estimations of the amorphous substance lead to the assumption that the amorphous substance is either a monobasic acid of the formula $C_{40}H_{56}O_{16} + 3H_2O$ resulting from the action of water on one lacton group $C_{39}H_{56}O_{13} \begin{smallmatrix} \text{CO} \\ \text{O} \end{smallmatrix} + H_2O = C_{39}H_{56}O_{13} \begin{smallmatrix} \text{COOH} \\ \text{OH} \end{smallmatrix}$ or a mixture of e. g. a monobasic acid, a dibasic acid and the original crystalline substance. It will be shown, that the strophanthidin, which results by the splitting of strophanthin with acids, is identical with Feist's strophanthidin, which he showed to be a dilacton. A study of the salts which amorphous acid strophanthin can form will doubtless have a bearing on the constitution of the amorphous acid strophanthin. The figures obtained by the combustion and titration of amorphous acid strophanthin will be compared with the calculated figures for the formula of monobasic acid strophanthin of the above given formula.

The reversion of the amorphous acid into the crystalline lacton could not be accomplished. It is interesting to note that the *figures obtained by the combustion of the amorphous body are the same as those obtained by Arnaud and by Kohn and Kulisch for their strophanthins.*

The following method of preparation, which is similar to the method of Arnaud

¹⁴This seed, as has been previously mentioned, was found by Prof. E. M. Holmes to be seed of *Strophanthus Kombe Oliv.*

¹⁵The comose hair was not gathered with the same care as seeds and pods, because the hairs contained no strophanthin, and the separating of the seeds being a rather disagreeable work, the dust affecting the mucous membrane of the nose, the separating was done in a well-ventilated room.

¹⁶The Pharmaceutical Journal and Trans., 1857, 17, p. 748.

¹⁷It is easier, as we afterwards found, to pound the seeds and after one extraction with petroleum ether to grind the extracted mass to a fine powder and extract it again to remove all the fatty oil, for it is impossible to grind to a fine powder the seeds containing fats.

¹⁸The Pharmaceutical Journal and Trans., 1889, 20, p. 329.

¹⁹Physiological testing, by Mr. O. E. Closson, showed that four successive extractions, made in the above-mentioned proportion, removed in the first percolation 86.5%, in the second percolation 9.4%, in the third percolation 2.4%, and in the fourth percolation 1.7% (considering 100% to be the whole amount of active substance extracted by these four percolations). Therefore, nearly all active substance is extracted in the first and second percolation.

(the recrystallization of the impure strophanthin being the only differences) was afterwards adopted, because the alcoholic extract did not always crystallize and Arnaud's method gives a better yield.

Crystalline strophanthin as we have shown can be obtained without any chemical purification from the alcoholic extract. It is thus possible to determine whether a certain chemical method of preparation of strophanthin from Strophanthus Kombe seed, gives a yield of naturally occurring crystalline strophanthin or of a derivative of strophanthin.

Method of preparation. 1.5 Kg. ground, fat free Strophanthus seed was percolated with 12 liters 70% alcohol and the percolate was distilled off in vacuo until about 1 liter fluid remained. To this fluid sufficient lead subacetate solution (Liquor plumbi subacetatis, U. S. P.) was added, to obtain an easily filtering mixture. The filtrate is a clear yellow fluid. The excess of lead was removed by hydrogen sulphide and the clear filtrate was evaporated at 40-45° with constant stirring. Until the fluid becomes concentrated it is important that it be kept alcoholic by frequent addition of a little alcohol. When the fluid has become a thin extract, the alcohol must be evaporated as much as possible. It will then crystallize readily. The crystals are separated on a hardened filter of large surface by suction. The recrystallization is made in the following manner to avoid conversion into the amorphous body. The crystals are dissolved by placing them in a dish with a small amount of 94% alcohol and heating to 40-45° and stirring occasionally. After having filtered the solution, the alcohol is now evaporated to a thick extract at this temperature and water is added until a thin extract is obtained. With constant slow stirring with a motor, the extract is again evaporated to remove the rest of the alcohol. The extract will then crystallize readily. As was observed by Arnaud, the alcohol cannot be used alone to recrystallize, because it leaves strophanthin as a varnish. This recrystallization is repeated until strophanthin is obtained with the properties, which will be described.

Another method of preparation was carried out as proposed by Bourquelot and Herissey²⁰ to exclude enzym action, by adding 2.6 Kg. fat free ground seed to 15 liter boiling alcohol of 94%. After boiling for twenty minutes the hot fluid was filtered off and the alcohol evaporated in vacuo; this gave an extract from which crystalline strophanthin identical with the crystalline strophanthin made by the previously described method was obtained.

Crystalline strophanthin, identical with the former described crystalline strophanthin, was also obtained by the method, described, from Strophanthus Kombe seed, regularly purchased for the manufacture of Tr. of Strophanthus. The first crystalline strophanthin will be called: strophanthin (ident.), the second: strophanthin (trade). No difference was found between them.

Properties of crystalline strophanthin. Kombe strophanthin (ident. and trade) is a white crystalline substance, showing under the microscope fine needles or long plates.

It contains three molecules of water of crystallization, which are readily given off in a vacuum desiccator more quickly in vacuo at 80°. By placing the dehydrated crystals in a chamber containing moist air the water is taken up again. In

²⁰Comptes rendus, 133, p. 690.

a vacuum at 100° C. or 105-110° C. no more water is given off than in vacuo at 80° C. Found by drying at 80° C. and 105-110° C. in vacuo for Strophanthin (ident.): 6.0%-6.5%-6.3%. In strophanthin (trade) 7.1 and 7.0%. Calculated for $C_{40}H_{56}O_{15} + 3H_2O$: 6.5% H_2O .

Melting point. The substance melts in its water of crystallization at 158-165°C., becoming a turbid mass. Dried, it melts at 178-179° C. Strophanthin (trade)



Crystalline Kombé-strophanthin.

gave the same results, and by mixing them together the same results were obtained.

Specific rotation was determined in 94% alcoholic solution of air-dried substance.

I. 1.000 gm. cryst. strophanthin (ident.) dissolved in 25 cc. 94% alcohol.

$$\begin{aligned} (a) \quad D &= \frac{100a}{lc} = +31.6 & l &= 2 \\ & & a &= +2.53^\circ \end{aligned}$$

II. 0.7500 gm. cryst. strophanthin (ident.) dissolved in 25 cc. 94% alcohol.

$$\begin{aligned} (a) \quad D &= \frac{100a}{lc} = +31.6 & l &= 2 \\ & & a &= +1.90^\circ \end{aligned}$$

III. A determination was also made in absolute (99.5%) alcohol.
0.7500 gm. cryst. strophanthin (ident.) dissolved in 25 cc. 99.5% alcohol.²¹

$$\begin{aligned} (a) \quad D &= \frac{100a}{lc} = +31.3 & l &= 2 \\ & & a &= +1.88^\circ \end{aligned}$$

IV. A determination was also made in watery solution (to compare with Arnaud's value).
a. 0.200 gm. cryst. strophanthin (ident.) dissolved in 25 cc. water.

$$\begin{aligned} (a) \quad D &= \frac{100a}{lc} = +28.7\% & l &= 2 \\ & & a &= +0.23^\circ \end{aligned}$$

b. 0.7500 gm. cryst. strophanthin (trade) dissolved in 25 cc. 94% alcohol.

$$\begin{aligned} (a) \quad D &= \frac{100a}{lc} = +30.5 & l &= 2 \\ & & a &= +1.83 \end{aligned}$$

Combustion.

I. 0.2670 gm. cryst. strophanthin (ident.) dried at 80° in vacuo gave 0.1947 gm. H_2O and 0.6073 gm. CO_2 .

II. 0.2318 gm. cryst. strophanthin (ident.) dried at 105-110° in vacuo gave 0.1667 gm. H_2O and 0.5291 CO_2 .

²¹For differences in rotation of alkaloids in 94% alcohol and absolute alcohol. See Jour. of Chem. Society (London), 1910, 97, p. 1328.

III. 0.2675 gm. cryst. strophanthin (ident.) dried at 105-110° in vacuo gave 0.1846 gm. H₂O and 0.6047 gm. CO₂.

IV. 0.2520 gm. cryst. strophanthin (trade) dried at 105-110° in vacuo gave 0.1802 gm. H₂O and 0.5680 gm. CO₂.

V. 0.2597 gm. cryst. strophanthin (trade) dried at 105-110° in vacuo gave 0.1872 gm. H₂O and 0.5863 gm. CO₂, or in percent:

	I	S. Ident.	III	IV	S. trade	V	Aver. S. ident.	Aver. S. trade	Calculated, f. C ₄₀ H ₅₈ O ₁₆
C	62.03	62.25	61.65	61.47	61.57	61.97	61.97	61.52	61.82
H	8.17	8.06	7.73	8.01	8.08	7.98	7.98	8.04	7.27

An aqueous solution of cryst. strophanthin has the following properties: Heated with a small amount of a mineral acid and made alkaline afterwards, it readily reduces Fehling's solution.

Crystalline strophanthin can be boiled with glacial acetic acid without producing a substance capable of reducing Fehling's solution. A trace of crystalline strophanthin, when added to sulphuric acid first turns dark green and then brownish.²²

It gives a white precipitate with tannic acid solution and no precipitate with lead acetate or basic lead acetate solution.

Properties of amorphous acid strophanthin. Acid strophanthin was not obtained in a recognizably crystalline form. It is difficult to determine how much water is present as a hydrate, since amorphous acid strophanthin is hygroscopic. This water is readily given off in vacuo at 100° C., no more water being given off in vacuo at 105-110° C. Found by drying in vacuo at 105-110° 5.9%, in other samples 7.7% and 8.0% of water. Calculated for C₄₀H₅₈O₁₆+3H₂O 6.37%.

Melting point. Acid strophanthin softens at about 100° C. in its hydrate water and melts at 165-170° C. The dried substance softens at 160° C. and melts about 180° C.

Specific rotation was determined in watery solution of air-dry substance 0.400 gm. dissolved in 25 cc. water.

$$(\alpha) \quad D = \frac{100a}{lc} = +29.6 \quad l = 2 \quad a = +0.33$$

Combustion.

I. 0.3375 gm. amorph. acid strophanthin (ident.) dried at 105-110° in vacuo gave 0.2333 gm. H₂O and 0.7177 gm. CO₂.

II. 0.2553 gm. amorph. acid strophanthin (ident.) dried at 105-110° in vacuo gave 0.1717 gm. H₂O and 0.5672 gm. CO₂.

III. 0.2316 gm. amorph. acid strophanthin (trade) dried at 105-110° in vacuo gave 0.1609 gm. H₂O and 0.5145 gm. CO₂.

IV. 0.2645 gm. amorph. acid strophanthin (trade) dried at 105-110° in vacuo gave 0.1873 gm. H₂O and 0.5899 gm. CO₂, or in percent:

	I Ident.	II	III Trade	IV	Aver. trade	Aver. ident.	Calc. f. C ₄₀ H ₅₈ O ₁₆
C	60.42	60.59	60.58	60.82	60.70	60.50	60.42
H	7.75	7.50	7.79	7.94	7.86	7.62	7.36

Molecular Weight of Crystalline Kombe Strophanthin and Other Kombe Strophanthins.

Feist (Berichte 31 (1898), p. 536 and 33 p. 2075), determined the molecular weight of Kombe strophanthin. In his first preliminary report Feist said: "The chosen formula (C₂H₃O)₁₆ is also supported by the cryoscopic molecular weight

²²Reaction of Helbing. The Pharmac. Jour., 1877, 17, p. 924.

determination in water. Calculated 688, found in the average 678 and 680. Notable molecular association occurs with increasing concentration."

The figures found by the determination are reported in his following paper in which Feist says: "The cryoscopic molecular weight determinations can only be determined in water ($c=18.9$) and give very uncertain results, calculated $C_{40}H_{66}O_{19}=850$.

I. Used air-dry strophanthin hydrate in tablets.

Substance.	Depression.	Mol. Weight Found.	Average Mol. Weight.
0.0956	0.030	572.8	678.5
0.2520	0.069	656.0	
0.3997	0.089	806.8	

The amount of water used was 10.52 gm.

II. Used strophanthin, which was dried several months over sulphuric acid, hygroscopic powder.

Substance.	Depression.	Mol. Weight Found.	Average Mol. Weight.
0.3155	0.079	614.1	680.8
0.6598	0.150	655.3	
1.2178	0.249	752.1	

The amount of water used was 12.29 gm.

The following are the figures obtained by our own research.

The strophanthins used for the experiments were:

I. Crystalline Kombe strophanthin, II, acid amorphous Kombe strophanthin (obtained by the action of water on crystalline Kombe strophanthin), III, amorphous strophanthin Merck.

Ia. Crystalline Kombe strophanthin.

Substance.	Depression.	Mol. Weight Found.	Calculated for $C_{40}H_{66}O_{19}$
0.0874	0.023	481	776
0.1785	0.037	611	

The amount of water used was 15.01 gm.

Another determination was made with crystalline Kombe strophanthin.

Ib. Crystalline Kombe strophanthin.

Substance.	Depression.	Mol. Weight Found.	Calculated for $C_{40}H_{66}O_{19}$
0.0517	0.012	551	776
0.1451	0.032	577	
0.2344	0.053	563	

The amount of water used was 14.91 gm.

II. Acid amorphous strophanthin.

Substance.	Depression.	Mol. Weight Found.	Calculated for $C_{40}H_{66}O_{19}$
0.1865	0.061	390	794
0.3940	0.100	503	
0.5223	0.139	486	

The amount of water used was 14.9 gm.

III. Amorphous Kombe-strophanthin-Merck.

Substance.	Depression.	Mol. Weight Found.
0.1407	0.030	596
0.2740	0.054	645
0.4246	0.081	666

The amount of water used was 14.95 gm.

These figures are in agreement with those of Feist for the same concentration. The last determination of the first experiment of Feist is undoubtedly an error. From these figures we observe that with higher concentration the molecular weight increases, therefore the figures of Feist's second experiment become close to the theoretical (776). Feist's explanation of this behavior was that the uncertain results are due to notable molecular *association* by increasing concentration. Through our recent investigation of the conversion of crystalline Kombe-strophanthin into the acid amorphous strophanthin we are able to give a better explanation, viz: *dissociation*. This is already indicated by the figures of Feist in which all his molecular weight determination fall well below the calculated.

The molecular weight was therefore determined in a non-ionizable fluid, which at the same time possesses sufficient solubility for strophanthin, in order to obtain the correct values. These fluids, alcohol, acetone, etc., could only be used conveniently by determining the increase in boiling point. The Beckman apparatus was used in which heating is accomplished by circulating vapor (Zeitschr. f. physik. Chemie, 40, 1902, P. 133).

The determination was made with alcohol as a solvent. Beckman determined the constant (molecular increase for 100 cc.)=15.6°.

Ia. Crystalline Kombe-strophanthin.

Cc. of alcohol.	Gm. Subst.	Observed increase	Gm. Subst. in 100 cc.	Found Mol. W.
14.1	0.3020	0.042	2.1464	797
15.7	0.3020	0.028	1.2850	716

Ib. Crystalline Kombe-strophanthin.

Cc. of alcohol.	Gm. Subst.	Observed increase	Gm. Subst. in 100 cc.	Found Mol. W.
12.7	0.3947	0.058	3.1080	836

The average molecular weight found for crystalline Kombe Strophanthin $1/3(797+716+836)=783$. Calculated for $C_{10}H_{20}O_{15}=776$.

II. Amorphous Kombe-strophanthin Merck.

Cc. of alcohol.	Gm. Subst.	Observed increase	Gm. Subst. in 100 cc.	Found Mol. W.
11.6	0.3116	0.044	2.6862	952
12.7	0.3116	0.037	2.4535	1034
14.4	0.3116	0.032	2.1639	1055

The average molecular weight found for Kombe strophanthin Merck $1/3(952+1034+1055)=1014$. The barometer stood constant during the experiments.

We believe that crystalline Kombe strophanthin contains two lacton groups, which may be different from the strophanthidin grouping, in that there are OH

radicals in the sugar which may interact with the formation of different lacton complexes and of internal ethers, thus accounting for the two less molecules of water in the molecule of strophanthin than would otherwise be expected. When dissolved in water both of these lacton groups hydrolyze to a certain extent into acids, which by their ionization give different molecular weight values, depending on the concentration. Therefore, by greater dilutions the apparent molecular weight calculated, according to the formula of Raoult is smaller, whereas by increasing concentration the molecular weight approaches the molecular weight of the calculated formula. For the acid amorphous strophanthin we believe that the molecule has undergone a rearrangement by which one of the lacton groups is converted permanently into an acid, which remains an acid independent of the concentration.

A simple reaction demonstrated that amorphous Kombe strophanthin Merck must contain a certain amount of acid amorphous strophanthin. Three pieces of blue or neutral litmus paper are moistened with water. A small amount of crystalline Kombe strophanthin is put on one, on the second a small amount of acid amorphous Kombe strophanthin, and on the third piece of litmus paper a small amount of amorphous Kombe strophanthin Merck. The papers indicate (by looking on the other side) that only crystalline Kombe strophanthin is neutral, whereas the other samples behave as acids.

Contrary to Feist's explanation, we find that the lower figures obtained with the cryoscopic molecular weight determination are due to a dissociation of the molecule.

By using alcohol with the ebullioscopic method nearly theoretical figures were obtained for the molecular weight of crystalline Kombe-strophanthin.

Titration of amorphous acid strophanthin with N/10 sodium hydroxide, phenolphthalein as an indicator.

I. 0.5000 gm. amorph. acid strophanthin (air dry) was dissolved cold in 10 cc. N/10 sodium hydroxide and titrated back with N/10 oxalic acid. Found: that 3.2 cc. N/10 sodium hydroxide was necessary to neutralize the strophanthin.

II. The same investigation repeated with 0.5000 gm. air-dry amorph. acid strophanthin gave as result that 3.1 cc. N/10 sodium hydroxide was necessary to neutralize the strophanthin.

III. 0.5000 gm. amorphous acid strophanthin (air dry) was dissolved in 10 cc. N/10 sodium hydroxide and heated until the fluid boiled. The cooled solution was titrated back with N/10 oxalic acid. Found: that 5.5 cc. N/10 sodium hydroxide was necessary to neutralize the strophanthin. Repeating the boiling with more alkali gave only a slight increase of the neutralizing value.

IV. The same investigation as III repeated with 0.5000 gm. air-dry amorph. acid strophanthin showed that 5.4 cc. N/10 sodium hydroxide was necessary to neutralize the strophanthin.

Found in the cold for 0.5000 gm. acid strophanthin: 3.2 cc. and 3.1 cc. N/10 NaOH.

Found by heating for 0.5000 gm. acid strophanthin: 5.5 cc. and 5.4 cc. N/10 NaOH.

Calculated for 0.5000 gm. monobasic strophanthin ($C_{31}H_{40}O_6$) 5.88 cc. N 10 NaOH.

Amorphous acid strophanthin is much more soluble in water than crystalline strophanthin. A watery solution of amorphous acid strophanthin has the following properties.

It slowly reduces Fehling's solution by boiling (a fresh aqueous solution of crystalline strophanthin dissolved in the cold does not reduce Fehling's solution by boiling).

Heated with a small amount of a mineral acid and made alkaline afterwards; it readily reduces Fehling's solution. It gives a white precipitate with tannic acid solution and no precipitate with lead acetate or basic lead acetate solution.

A trace of amorphous acid strophanthin, when added to sulphuric acid first turns greenish brown and then brown.

When a 12% solution of hydrochloric acid containing crystalline or amorphous strophanthin is boiled no appreciable amount of furfural or methylfurfural is formed.²³

0.2000 gm. pure rhamnose ($C_6H_{14}O_6$) was distilled with 500 cc. 12% hydrochloric acid from a round flask, which was connected with a condenser by a ground joint. The distilling fluid was gathered in an Erlenmeyer flask, which had a mark indicating 400 cc. A small piece of unglazed porcelain was added to the boiling fluid to prevent bumping. The round flask was heated in an air bath. After about 4 hours the distillation was ready and to the clear distillate a filtered solution of 0.300 gm. pure phloroglucin in about 15 cc. warm 12% HCl was added and the Erlenmeyer flask was kept dust free for 15-18 hours. Then the methylfurfural-phloroglucid, which had settled as a red precipitate, was filtered on a weighed quantitative filter, which had been dried at 97-100°. The precipitate was washed with 150 cc. water and the filter with precipitate dried for 3½-4 hours at 97-100° and weighed. 0.200 gm. rhamnose ($C_6H_{14}O_6$) gave 0.1310 gm. methylfurfural-phloroglucid or according to the formula of Ellett and Tollens. (Journal f. Landwirtschaft 1905, p. 13.)

Rhamnose = Ph. \times 1.65 — Ph² \times 1.84 + 0.010.

When Ph = amount of phloroglucid.

we find 0.209 gm. rhamnose.

The method was tried out on ouabain (gratus strophanthin), which according to Arnaud and also to Thoms has the formula $C_{30}H_{46}O_{12} + 9 H_2O$. Arnaud could separate crystalline rhamnose by splitting ouabain with acids. A quantitative estimation of rhamnose was made by Arnaud by titrating the fluids remaining by hydrolysis according to Soxhlet. Arnaud²⁴ found in this way 24.2% $C_6H_{14}O_6$ in $C_{30}H_{46}O_{12} + 9 H_2O$ calculated for 1 molecule $C_6H_{14}O_6$ 23.9%.

0.960 gm. air dry ouabain was distilled in the above described manner and gave 0.1540 gm. methylfurfuralphloroglucid or according to the formula of Ellett and Tollens found: 0.2205 gm. rhamnose in 0.960 gm. $C_{30}H_{46}O_{12} + 9 H_2O$ or 22.9%.

²³Concerning the furfural and methylfurfural estimations:

Krober—Jour. f. Landwirtschaft, 1900, p. 279.

Ellett and Tollens—Ber. 38, p. 492, Jour. f. Landw., 1905, p. 13.

Mayer and Tollens—Jour. f. Landw., 1907, p. 268, Ber. 40, p. 2441.

²⁴Comptes rendus 126 (1898), p. 1208.

The method was now applied to crystalline and acid amorphous strophanthin. 0.750 gm. air dry crystalline strophanthin gave 0.0074 gm. brownish phloroglucid. Calculating this as methylfurfurphloroglucid we get according to the formula of Ellett and Tollens 0.0211 gm. rhamnose ($C_6H_{14}O_6$) in 0.750 gm. air dry crystalline strophanthin or 2.9%. 0.850 gm. air dry amorphous acid strophanthin gave 0.0070 gm. brownish red phloroglucid. When we figure that it is methylfurfurphloroglucid, we get according to the formula of Ellett and Tollens 0.0215 gm. rhamnose ($C_6H_{14}O_6$) in 0.850 gm. amorphous strophanthin, or 2.5%. If air dry crystalline strophanthin ($C_{40}H_{58}O_{15} + 3 H_2O$) should contain 1 molecule rhamnose the percentage $C_6H_{14}O_6$ would be 21.9% and for the air dry amorphous acid strophanthin ($C_{40}H_{58}O_{16} + 3 H_2O$): 21.4%.

We can conclude, therefore, that *no rhamnose* is present in Kombe strophanthin.

According to Feist rhamnose and d-mannose should be present in Kombe strophanthin. If 2 molecules of d-mannose are contained in crystalline strophanthin then 0.750 gm. $C_{40}H_{58}O_{15} + 3 H_2O$ should contain 0.325 gm. mannose and 0.850 gm. $C_{40}H_{58}O_{16} + 3 H_2O$ should contain 0.359 gm. mannose. Therefore, 0.340 gm. d-mannose was distilled with 12% HCl to allow a comparison with the results of the former estimations. When 0.300 gm. phloroglucid was added to the distillate of 0.340 gm. mannose with 12% HCl *no precipitate* was visible after 18 hours. Therefore, d-mannose cannot be the reason of the formation of the small yield of phloroglucid from strophanthin.

Strophanthidin. The strophanthidin prepared by Kohn and Kulisch from their strophanthin is different from the strophanthidin prepared by Feist. By splitting crystalline strophanthin by the method of Kohn and Kulisch or by other methods or splitting amorphous acid strophanthin with 1% H_2SO_4 , the same strophanthidin was always obtained and this strophanthidin proved to be identical with that described by Feist.

Strophanthidin was prepared from crystalline strophanthin by the method of Kohn and Kulisch. (See the prescription of this method above.)

It separated out in yellow crystals, which after recrystallizing three times from hot alcohol and concentrating the solution, separated in fine, large, colorless crystals, which showed under the microscope the same form as the picture of strophanthidin given by Feist. The following procedure gives a better yield than the method of Kohn and Kulisch: To 100 cc. boiling 1% HCl 5 gm. crystalline strophanthin in fine powder was added. After dissolving the strophanthin the fluid was cooled and strophanthidin separated quickly in fine white crystals, which were filtered by suction and washed with water. After two crystallizations from hot alcohol nice large crystals can be obtained. Amorphous acid strophanthin separates a dark resin when heated with 2% HCl. The best method to split amorphous acid strophanthin was found to be boiling with 1% H_2SO_4 . 6 gm. amorphous acid strophanthin was boiled with a reflux for one-half hour with 50 cc. 1% H_2SO_4 . The yellow separation was repeatedly crystallized from hot alcohol and gave the same strophanthidin as prepared from crystalline strophanthin, therefore, by the action of sulphuric acid, the acid group goes over to a lacton group.

(To be continued.)

PRESCRIPTION FAKES AND HEALTH AND BEAUTY TALKS.*

One of the "features" of the modern metropolitan daily is the "Woman's Page," in which is given, for the education or delectation of feminine readers, reading matter that ranges from the useful to the inane. Naturally enough, we find the important subject of care of the health learnedly (?) discussed by the "Madames" or "Mademoiselles" who have charge of these departments. To the "patent medicine" advertiser who would deceive the reader by publishing his advertisement in "reading matter" style, space on these "Women's Pages" is a valuable asset. A form of deceptive advertisement that of late has become very popular with nostrum exploiters has previously been referred to in these columns as "prescription fakes." The advertisements are usually set as reading matter, and contain information regarding the treatment of some physical ailment by means of the drugs contained in an innocent looking formula; usually all the drugs but one are official, the exception being a "patent medicine" with a name not unlike the pharmacopœial preparations. A modification of the "prescription fake" type of advertisement forms the subject of this article."

Every week or so "Mrs. Mac Martyn's" fake department will appear in the paper, the initials of the "correspondents" and the wording of the "answers" varying, but the usual changes being rung on spurmax, crystos, almozoin, canthrox, quinola, parnotis, kardene and luxor.

Should the innocent reader go to the drug store and ask, say, for four ounces of spurmax, she is given the inevitable "original package," consisting of a tin box bearing a label with the name of the preparation, the method of using it and the various conditions for which the nostrum is recommended. There is also the statement, "Made by H. S. Peterson & Co., 95-97 Kinzie St., Chicago." The company putting out these medicinal agents is not a firm of pharmaceutical chemists, but, we understand, manufactures flavoring extracts and does business largely by means of women agents throughout the country.

Four of these deceptively advertised nostrums were analyzed in the Association's laboratory. The laboratory report follows:

ALMOZOIN.

Almozoin, as found on the market, is a pale pinkish-white powder, having a faint odor like benzaldehyd. Qualitative examination of almozoin demonstrated the presence of magnesium, sodium, tragacanth, a carbonate and a borate. Free boric acid, ammonium salts and sulphates were absent. Magnesium and the borate radicle were determined and the tragacanth was approximately estimated. From the results of the examination it would appear that the composition of almozoin is essentially as follows:

Tragacanth (gum tragacanth).....	40 percent
Sodium borate (borax).....	40 percent
Magnesium carbonate	20 percent

(Retail price of almozoin, one-half dollar; estimated cost of ingredients, three cents.)

*Kansas State Board of Health Bulletin.

CRYSTOS.

The specimen package of crystos which was purchased contained about one ounce and was a coarse, white odorless powder. Qualitative tests demonstrated the presence of chlorid, free boric acid, borate, sodium and traces of sulphate. Alkaloids, ammonium salts, carbonates, heavy metals and potassium were absent. Determinations of chlorid and of free and of combined boric acid were made, from which it would appear that the composition of crystos is about as follows:

Dried sodium borate (dried borax)	20 percent
Sodium chlorid (common salt)	20 percent
Boracic acid	60 percent

(Retail price of crystos, one-half dollar; estimated cost of ingredients, one cent.)

PARNOTIS.

Parnotis is a pale, cream-colored, fine powder, having an odor resembling cologne, which dissolves in water and forms a turbid solution, which becomes clear by filtration. Qualitative examination of the preparation demonstrated the presence of bicarbonate, sulphate, sodium and traces of chlorid and of iron. Quantitative determinations of the sulphate and of the bicarbonate were made, from the results of which it would appear that parnotis consists essentially of:

Impure anhydrous sodium sulphate	25 percent
Sodium bicarbonate	75 percent

(Retail price of parnotis, one-half dollar; estimated cost of ingredients, less than two cents.)

SPURMAX.

Spurmax is a pink, crystalline powder, highly perfumed. Qualitative tests demonstrated the presence of magnesium and of a sulphate. The absence of more than traces of chlorid, carbonate, organic compounds and heavy metals was shown by the usual tests. Quantitative determinations were made for magnesium, for sulphate and for water. Microscopic examination indicated that the coloring matter was very unevenly distributed throughout the preparation, some crystals being colorless, while others were very highly colored. Essentially, spurmax consists of:

Crystallized magnesium sulphate (Epsom salts) ..	100 percent
Perfume	Trace
Coloring matter	Trace

(Retail price of spurmax, one-half dollar; estimated cost of ingredients, one cent.)

NEW FORM OF AN OLD TRICK

Spurmax, then, when subjected to the critical light of analysis and shorn of the hypothetical virtues with which "Mrs. Mae Martyn" invests it, proves to be Epsom salts colored pink and rendered highly odoriferous; the "flesh reducer that . . . should reduce your weight ten pounds in a few weeks" contains, apparently, nothing more marvelous than sulphate and carbonate of soda—and so it goes. The old, old trick of the charlatan, the quack and the nostrum exploiter is again in evidence. Give some well-known drug a fancy name, disguise it physically if possible, advertise it as possessing marvelous virtues and sell it at a price out of all proportion to its value.

"HEALTH AND BEAUTY TALKS."

For several months past many newspapers have been carrying on the "Woman's Page" what, to the uninitiated, appears to be a department devoted to answering queries regarding health. The "department" is entitled "Health and Beauty Talks," or "Health and Beauty Helps," or "Aids," or "Secrets"—the last word of the title varying with the copy. Under the title is the legend, "By Mrs. Mae Martyn." The subject matter consists of information (?) on questions of health, given in the "answers to correspondents" form; the first and last "answer" usually makes reference to none but simple home remedies or pharmacopoeial preparations. For instance:

"Q. 1. A good foot wash is made of a pint of water, to which is added a tablespoonful of salt and a pinch of alum and a few drops of arnica."

Every other "answer," however, contains a "joker" in the form of nostrum which is referred to in such a way as to lead the unsuspecting reader to imagine that it is but an ordinary official drug. Thus, in the advertisement before us, there are nine replies. Here is a sample:

"Ethel J.: (1) It made me happy to read your letter. I am glad you think so well of my recipes that you cut them out and pass them along to your friends. None should have difficulty in getting from her druggist any ingredient I name, for I never advise use of anything that is not sold in first-class drug stores everywhere. (2) The only objection I know to the use of liquid complexion beautifiers is their high cost when purchased in a ready manufactured state. You can make at home a fine 'liquid powder' that softens and whitens the skin by putting two teaspoonfuls of glycerin and four ounces of spurmax in one-half pint of boiling water; let stand until cold. Apply with the palm of the hand and rub until dry. I prefer this spurmax wash to any face powder I can buy."

The "joker" in this answer," of course, is spurmax. In the other "replies," all worded in the same deceptive way, the reader is urged to get—

Crystos—"For tired and inflamed eyes."

Almozoïn—"For blackheads, . . . freckles and tan."

Canthrox—"For shampooing purposes."

Quinola—"To remove dandruff, stop falling hair, relieve itching . . . and promote the growth of hair."

Parnotis—"A flesh reducer that . . . should reduce your weight ten pounds in a few weeks."

Kardene—"A splendid blood tonic and liver invigorator . . . for pimples, yellow blotches, sallow complexion, scrofula and all eruptions of the skin."

Luxor—"A very dear friend of mine cured a most obstinate case of eczema with this remedy."

 RECIPROCAL INTERSTATE REGISTRATION.

WM. MITTELBAUGH, PH. G., BOONVILLE, MO.

Requiring the practitioner of pharmacy to be a graduate from a school of pharmacy, in addition to passing a state board, is the hitch or stumbling block that makes general interstate registration practically impossible. In those states where this is required by law, the non-graduate cannot possibly register, no matter

how competent or efficient he may be. The writer is of the opinion that our higher courts would not sustain such a position. A druggist is one who buys and sells drugs. When he becomes skilled in compounding and the preparation of drugs and versed in their identification he is an apothecary or pharmacist. To withhold license from such an one because he obtained his knowledge outside of college walls, seems to me not to be tenable.

At the Denver meeting one of our foremost teachers of pharmacy—one who has spent his whole life in the lecture room and laboratory—clearly and explicitly expressed himself that in his opinion no board has a right to question the source of a candidate's knowledge. Such a position taken by one who could well take the opposite view, should have some weight with those grappling with the problem of interstate registration. Would that our vocation were wholly professional; then could we exact higher professional training.

This is, however, not the case; the business of the pharmacist is more one of a mercantile character; that is we are more druggist than apothecary or pharmacist. The logical and sensible view to take of the situation is that of the Professor. When we do this, justice will be done to the applicant for registration, and reciprocal registration will be readily brought about. A person being licensed in one state, should have the right to cross the line into another state and register without again having to pass an examination. It seems foolish to think that one competent to compound and dispense drugs in one place, is not competent to practice just across the line in another state. An injustice is being done to the pharmacist and the public gains nothing thereby. Where improvement can be made is with the boards. It is evident that the business of examining boards is to pass on all applicants alike, no matter where from, and that special recognition of college graduates should not be their business. Let us expend our energies in harmonizing examinations and bring about a more uniform standard, on a *common sense basis*. Persons equipped with good college and laboratory training will take care of themselves. They don't need any special consideration, moreover the non-recognition of diplomas will at once remove all danger of recognizing weak and inferior schools. When the several boards will stand on such a platform, the establishment of a national examining board will be feasible, and the registered pharmacist will receive his just dues and proper consideration. After all is said, it depends almost wholly on the individual, be he a graduate pharmacist, or a self-made pharmacist, whether he succeeds in business or not. Confidence of the people gauges his success, and gives him his proper professional and commercial standing.

THE NEED OF FEDERAL LEGISLATION IN PHARMACY.

ALBERT H. DEWEY, PH. G., M. S., PURDUE UNIVERSITY, LAFAYETTE, IND.

One who knows enough to fill a prescription on the north bank of the Columbia River should know enough to fill the same prescription on the south bank of the same river even though it is in another state. A man who is qualified to practice

pharmacy in Kansas City, Mo., should be competent to do the same thing in Kansas City, Kan., without additional qualification, examination, or registration.

It should be apparent without much argument that the nature of the practice of pharmacy, and incidentally, that of medicine as well, is such that it cannot be hemmed in or limited by the arbitrary confines of state boundary lines. It differs no more in different states than it does in different localities in any given state. Our Pharmacopoeia and National Formulary are national standards and are the same in every state. In fact, so well recognized is this principle, that an organization of most of the state boards of pharmacy has been effected "to provide for interstate reciprocity in pharmaceutical licensure based upon a uniform minimum standard of pharmaceutical education and legislation."

Worthy as this object may be, and earnestly as we may all hope to see it accomplished, I desire nevertheless to point out that such an association is purely voluntary and that under existing laws there is no way of making the rulings of this association authoritative or binding upon any state. Moreover the conditions under which interstate reciprocity is granted should not be subject to the whim or caprice of any future board of pharmacy in any given state. Some of the states at present will not become active members, while others will not affiliate themselves with the movement even as associate members and there is no way of compelling them to do so. Universal reciprocity is therefore by no means a certainty near at hand and can never be guaranteed for the future.

From all quarters comes the heartiest commendation of the happy idea of a federal law controlling the handling and sale of narcotic drugs. All thoughtful pharmacists are agreed that state laws, however stringent, are inefficient to cope with this problem. There are many other fields in which the need of federal legislation is recognized, and it seems to me that the situation is analogous with reference to pharmaceutical licensure.

What we need is not universal interstate reciprocity, but a United States licensure by a properly constituted authority. We need a federal pharmacy law, creating either a United States Board of Pharmacy or a Bureau of Pharmacy, with powers to examine candidates, to grant licenses valid in the United States and its possessions, and to revoke such licenses for cause, fixing the minimum educational requirement for examination and defining the rights and privileges of such licensed pharmacists.*

Doubtless a more efficient plan would be an extension of the scope and powers of the Public Health Service to include the above functions save, of course, those things defined in the act so extending its powers.

The practice of pharmacy certainly bears a most vital relation to the public health and it would seem that both could be better conserved and protected by a federal control of pharmacy than under the present system of control by state boards.

The same is doubtless true of medicine, dentistry, and all allied professions which have a bearing upon the conservation of the public health. I am, here, however, speaking only of pharmacy and I am free to confess an utter inability

*Amendment of the Federal Constitution would, of course, be necessary to make such a law valid.—EDITOR.

to see any hope of a "uniform minimum standard of pharmaceutical education" or "uniform legislation" when this uniformity must be sought at the hands of forty-eight different state legislatures. Uniform enforcement of the law by forty-eight different state Boards of Pharmacy might indeed be questioned even if the impossible were accomplished in securing uniform legislation. On the other hand a federal pharmacy law with federal enforcement would be uniformity itself.

Recently there has been considerable agitation concerning a distinction between a pharmacist and a druggist. In some parts of the country this has taken the form of an effort to certify certain pharmacies or to certify certain pharmacists (a point upon which published accounts are not clear) but so far it has met with no success.

This agitation is partially the result of a commendable effort on the part of physicians to establish a means of *knowing* for a certainty where their prescriptions will be properly filled with "pure and standard drugs as ordered." It is also partially the result of the experience of the past, which proves the wisdom of separating pure pharmacy and the dispensing of prescriptions from the heterogeneous merchandizing of the drug store. Such a separation would remedy many of those. Unsatisfactory conditions of present-day pharmacy which have contributed to this agitation, would be in perfect accord with the wisdom of the ages, would injure no man now in the business, would result in better service to the physician and the public, and therefore should be made.

I should like to point out that the enactment of such a federal pharmacy law as above indicated would afford an effective means of distinguishing between a pharmacist and a druggist and of separating the pharmacy from the drug store, a consummation which cannot be attained under state laws no matter how devoutly it be wished.

ADVERTISING NOT AN OCCULT ART.

Too many people acquire the idea that advertising is an occult art. The merchant in a small town is too apt to say to himself: "I can't afford to hire an advertising expert, and there are none in this town, if I could. I don't know anything about the magical art myself. Therefore I won't attempt to advertise." And he doesn't.

Advertising is not a black art. The larger towns, of course, have advertising men who get very expert in their lines, and who can tell you how to engineer to the best advantage any sort of an advertising proposition from a two-line reading notice to a \$100,000 campaign. This is an age of highly trained specialists, and advertising has its specialists. Most of them, by the way, trained themselves. The art is still in the pioneer stage, and men now living are blazing the trails.

You can write an advertisement. You might not be able to plan a large campaign without any waste, but you can write an advertisement, and possibly a good one.

To write an advertisement, you proceed almost exactly as in writing a telegram. That is, you omit all unnecessary matter; you boil it down. You choose short, plain words, which are not likely to be confused with similar words of different meanings.—W. S. Adkins, in *National Druggist*.

Papers Presented to Local Branches

ON UNIFORMITY IN DRUG STANDARDS AND UNIFORM REQUIREMENTS IN DISPENSING.*

J. ROEMER, WHITE PLAINS, N. Y.

In a paper by L. E. Sayre, of Lawrence, Kansas, given as a reprint from the Journal of the Kansas State Medical Society, this subject was presented at the February meeting of this Branch, and after discussion was made a special order for consideration at this meeting.

The object of this presentation, as I deduce it, is to obtain an expression of sentiment from the members of this Branch as well as from pharmacists at large, and to lend influence and aid to a movement that should result in great good to both medicine and pharmacy, if successfully carried out.

At this time it must be apparent to all observant pharmacists and physicians that the discussion is unquestionably prompted by a desire to ameliorate existing conditions which are recognized as evil, operating as an almost insuperable barrier to the harmonious relations which should exist between pharmacy and medicine, retarding progress and preventing the fulfillment of the obligations which pharmacists and physicians owe to their respective callings.

That these conditions have long existed is true, but what is surprising is the fact that up to the present time no concerted movement for their correction has been advocated, nor has there been any endeavor to ascertain to what degree they are responsible for the iniquities attributed to them. It is therefore opportune that some missionary work be undertaken and the subject thoroughly agitated.

Taking up the first part of this subject, "Uniformity in Drug Standards," and looking over the field of accomplishment in this direction we find that legal enactments with penalties attached are the only instruments at our disposal to provide for obtaining fairly standard drugs employed for the alleviation of disease. This is an indictment of both professions, for it is based on the weakness inherent in human nature, and opportunity ever seeks to profit at the expense of both professions. Medicine no less than pharmacy is culpable, and perhaps more so, by reason of its exemption to a great extent from these legal requirements.

The laws in most states concerning drug standards have some reference to what such standards should be, and many of them are phrased to meet the wording of the national law. This, however, has proven inadequate to meet the issue, for the exemption provision therein contained gives too wide a latitude and permits the sale of a drug of any standard. This is the largest loophole which needs closing, without which no real progress can be made.

*Read before the New York Branch, March 10, 1913.

It is palpably evident this provision extends immunity to all who are indifferent to better standards. This having served as the model was to a great extent copied and embodied in the several state regulations and served as a means for transferring the same immunity to intra as well as interstate commerce.

In a paper presented at the last meeting of the N. Y. S. Ph. A., particular attention was directed to this provision, since which time in an address delivered by Dr. Lyman Kebler, on the "Quality of Drugs on the Market," and printed in the Journal of the A. M. A. in the issue of November 12, 1912, it is stated that

"The proviso of section 7 is unfortunate in many respects. In the first place the standard is clearly set forth in the first part of the section, and then the proviso is inserted, knocking down the standard. This proviso not only works injury to the wholesaler, manufacturer, and retailer, but may do incalculable harm to the physician and unfortunate sick. * * * It is hoped that the medical profession will exert its influence in eliminating or modifying this proviso so as to make it possible for the physician to secure drugs of unquestioned quality and purity."

This is the obstacle in the way, and so long as this is in the statutes, all efforts directed to uniformity in drug standard will miscarry.

The second part of this subject, "Uniform Requirements in Dispensing," does not present so clear a course, for we here are taking up a subject which is part of an economic condition and which through long continued existence is claimed as a right, and grasping this as a first offense will let loose a perfect torrent of argument, charges and counter charges, but if taken up by both professions with the spirit of just contention we may hope to some day crown our efforts for a better understanding.

On the assumption of our right as pharmacists to question this condition, what can we offer to offset it? Is every pharmacist on the side of right in demanding a reformation?

As a recognized evil, however great it may be from our point of view, is it not a condition to great extent brought about through carelessness and indifference on the side of pharmacy?

Through our own apathy iniquities have crept in; men who were more alert to the conditions set up manufacturing plants; others foisted nostrums and proprietaries upon us; others again resorted to quackery, each and all tending to lure away, little by little, what by right belonged to neither, until today we have seething discontent in pharmacy and in medicine.

The subject advanced by Professor Sayre is timely—it is more than timely. It is absolutely necessary for the salvation of pharmacy and the redemption of medicine that the two professions come together upon a square issue of fact and clear away the influences that are operating to destroy the confidence necessary for the help that each should be to the other.

Professor Sayre considers self-respect and ethics as fundamentals. I agree with him, but I do not lose sight of the fact that self-respect and ethics followed by a few, will never redeem us. It is through reliance on these props that we are today living under the conditions we now have.

What is needed are drastic measures, in the form of simple, plain and direct mandates.

Let the physician state his demands on pharmacy, that no nostrums of any kind be supplied, whether they be in disguise as open formula, or so-called patent or ethical proprietaries; that pharmacy find no reason for prescribing; that pharmacy confine its whole effort in the preparation and supply of reliable medicaments.

Let the pharmacist demand that physicians within certain distances from source of supply write prescriptions for medicaments as required, waiving emergency treatment.

That physicians who find it incumbent upon them to supply medicine be subject to the same rigid control as the pharmacist, both in respect to their qualifications and in respect to the quality of drugs dispensed; and that the dispensing physician be required to record all selfdispensed medicaments, which record shall be subject to regular inspection.

The best means of proceeding to the solution of the problem is through the honest and sincere cooperation of the A. M. A. and A. Ph. A., each conceding something to the other, and being thoroughly in accord with justice to both. Then medicine will revert to the science of diagnosis and prescribing, and pharmacy will again claim its own as the science and art of providing the medicaments.

GROWTH OF THE HEROIN HABIT.

The Syracuse Retail Druggists' Association has drafted an ordinance to suppress the heroin evil which has been submitted to the city council. Members of the association declare that the growth of the heroin habit in Syracuse during the last eighteen months has been appalling. Dope users who found that police surveillance made it very difficult to secure opium, morphine and cocaine, soon learned that heroin could be easily obtained. No prescription is necessary. As a result they began using this drug, and the habit grew by leaps and bounds. It started in the poorer districts, but soon spread to the better portions of the city.

Heroin had formerly been used in cases of bronchial trouble, but the demand for it had not been heavy. "Heroin tablets are now being purchased in hundred lots," said Mr. Weston, "and the habit is spreading throughout the city. No one realizes the extent of the use of this drug except the physicians and the retail druggists. Young men who want to brace up in order to go to work are dosed with heroin. They usually try the dose a second time and a third, and soon they become habitual users. Young women up late at night use the drug once or twice and then become addicted to it."—*Voice of The Retail Druggist*.

Of General Interest

SECOND MEETING OF THE NATIONAL DRUG TRADE CONFERENCE.

MINUTES OF THE EXECUTIVE COMMITTEE.

The Executive Committee met in Room 132 of the New Willard Hotel at 11:00 o'clock Wednesday morning, April 9, those present being John C. Wallace, Chairman, Dr. J. H. Beal, James F. Finneran, C. Mahlon Kline and Charles J. Lynn, alternate for Secretary Charles M. Woodruff, who was ill at his home in Detroit and unable to be present. The Committee had under discussion:

First—The Harrison bill, known as H. R. 28277.

Second—A bill prepared by Mr. Samuel Rosengarten modeled after No. 28277.

Third—A bill drawn by Mr. Charles M. Woodruff modifying the Rosengarten bill.

Fourth—An entirely new bill submitted by Mr. F. H. Freericks, representing the N. A. R. D., and

Lastly—A bill known as the "American Medical Association Bill."

For the guidance of the Committee the following resolution, offered by Dr. J. H. Beal and second by Mr. J. F. Finneran was adopted:

"Resolved, That it be the sense of this Committee that the bill is not intended, and ought not to be intended, to regulate sales to consumers, but only to trace narcotic drugs in commerce to the hands of the last distributor, and that the regulation of the sale of such drugs to the consumer in intrastate commerce should be left entirely to state, territorial and other local laws."

After a very thorough discussion lasting until midnight, with only brief adjournment for lunch and dinner, a bill was drafted for submission to the Conference the next morning embodying in the main the provisions of the Rosengarten and Woodruff drafts, although, as a matter of fact being a composite bill containing what the Executive Committee considered to be the best features of all of the bills submitted for its consideration.

The Committee again met in Room 132 at 2:00 o'clock Friday afternoon, April 11, to carry out the instructions of the Conference as embodied in the resolution introduced by Dr. J. H. Beal, and found in the minutes of the meeting of the Conference Friday morning.

The bill as it left the Conference received only a few minor changes at the hands of the Executive Committee and these having to do mainly with changes in the "language" of the bill in order to harmonize certain inconsistencies brought about by the changes made in the bill by the Conference itself. The intent of the bill, however, was in no wise changed and a copy of the bill as presented to the Hon. Francis Burton Harrison is herewith attached and made a part of this report.

The bill as it left the Conference received the very careful consideration of the

Executive Committee from 2:00 o'clock Friday afternoon until late that evening, when it was turned over to a stenographer for final copies.

On Saturday morning, April 12, at 11:00 o'clock, the Executive Committee, with the exception of Mr. Kline, who was called home, met by previous engagement the Secretary of the Hon. Francis Burton Harrison, Miss Lanham, in Mr. Harrison's office in the Congressional Office Building, and there explained the Conference bill section by section, pointing out wherein it differed from the Harrison bill, H. R. 28277. Before leaving the office we requested Miss Lanham to say to Mr. Harrison that if he wished to make any changes in the Conference bill that the Committee would like very much to have a conference with him to discuss the changes before the bill, as he might amend it, was submitted to Congress so that after the bill was once introduced it might have the hearty support of all of the organizations represented in the Conference. Miss Lanham stated that this was just what Mr. Harrison wanted, and the Committee left the office with that understanding. It was impossible to see Mr. Harrison himself then, as explained by Miss Lanham, because of the fact that he could not get away from the Democratic caucus considering the tariff bill.

Respectfully submitted,

CHAS. J. LYNN, Secretary pro tem.

MINUTES OF THE SECOND MEETING OF THE NATIONAL DRUG TRADE CONFERENCE,
WASHINGTON, D. C., APRIL 10-11, 1913.

(First Session.)

Delegates to the Conference met in the Gridiron Room of the New Willard Hotel, Washington, D. C., April 10, at 10:00 a. m. Chairman John C. Wallace, New Castle, Pa., presided. Charles J. Lynn, alternate for Secretary Charles M. Woodruff, was on motion of James H. Beal, elected Secretary pro tem of the Conference.

The roll call showed the following delegates present:

Representing the American Pharmaceutical Association—

John C. Wallace, New Castle, Pa.

S. L. Hilton, Washington, D. C.

J. H. Beal, Seio, Ohio.

Representing the National Wholesale Druggists' Association

C. Mahlon Kline, Philadelphia, Pa.

E. D. Taylor, Richmond, Va.

Albert Plaut, New York, who held the proxy of F. F. Holliday, New York City.

Representing the National Association of Manufacturers of Medicinal Products—

Adolph Rosengarten, Philadelphia, Pa.

A. R. L. Dohme, Baltimore, Md.

Charles J. Lynn, Indianapolis, Ind., who held the proxy of Charles M. Woodruff, Detroit.

Representing the American Association of Pharmaceutical Chemists

R. C. Stofer, New York City.

A. S. Burdick, Chicago, Ills., holding the proxy of W. C. Abbott, Chicago.

George Hall, holding the proxy of Willard P. Stearns.

Representing the National Association of Retail Druggists—

W. C. Anderson, Brooklyn, N. Y.

F. H. Freericks, Cincinnati, Ohio.

J. F. Finneran, Boston, Mass.

The following report of the Secretary of the Conference, Mr. Charles M. Woodruff, was read and approved:

SECRETARY'S REPORT.

To the Officers and Members of the National Drug Trade Conference:

"Regretting my inability on account of sickness to personally attend the meeting of the Conference called to be held Thursday, April 10, at the New Willard Hotel in Washington, D. C., I transmit herewith the official minutes of the proceedings of the Conference held January 15, 1913.

Copy of General Letter No. 1.

What suggestions I have received in response to such letter.

Preliminary financial report.

"I have no comments to make upon the suggestions received further than to express my regret that circumstances beyond my control prevented me from submitting them to the Executive Committee for study as contemplated in the first resolution quoted in General Letter No. 1.

"I desire to point out, however, that the Conference Bill introduced by Mr. Harrison as H. R. 28277, while as near perfect as any bill the Conference will agree upon so far as our understanding of it is concerned, when carefully analyzed in the quiet of the study was found to be full of inconsistencies, ambiguities and constitutional pitfalls as likely to be practically and judicially construed. Mr. Rosengarten has had this bill redrafted in a way, I think, that avoids these inconsistencies, ambiguities and pitfalls and meets the criticisms submitted on these scores.

"I have tried to look at the Rosengarten bill fairly from the viewpoint of every one concerned; and when three sections of it are modified as I will suggest, I do not see where any reasonable importer, manufacturer, wholesaler, retailer, physician, veterinarian or dentist can find any fault with it. The physician's prescriptions are not affected by the bill, neither is the druggist in filling them. Then again, the doctor is not restricted in purchasing; but if he purchases he must do so upon the same terms the druggist does, and this is only fair. It seems to me, however, that Section 5 of the Rosengarten bill as drafted is entirely unnecessary and will impose a burden that will probably fall heavier upon the wholesaler than any other class and nearly as heavy upon the retailer. Remembering that the law will require every purchaser to keep duplicate copies of his orders, what necessity exists for requiring him to register such purchases in a book daily? I submit a draft embodying a provision for a monthly report upon a form to be provided by the Collector of Internal Revenue which the importer, manufacturer, wholesaler or retailer, as the case may be, can make out from time to time at his convenience without interference of the rush of getting out orders. This monthly report can be compiled from the retained duplicate orders for the month and will answer every purpose.

"When I read Section 6 of Mr. Rosengarten's bill I supposed its intent was to punish a registered dealer for a sale to an unregistered dealer, even when he had received the official order. Then it occurred to me that if this be true what protection to the dealer is the official order. When I read this section the second time I perceived that the intent was to forbid shipments by those who had not

registered. Now this intent can be made more clear by transposing the words 'who shall not have registered and paid the special tax as required by Section 1 of this Act,' so that they will come immediately after the words 'any person' in the first line of Section 6 of Mr. Rosengarten's bill instead of after the words 'District of Columbia' in the fourth line.

"As I have said most of the criticisms received to H. R. 28277 related to inconsistencies, ambiguities, possible constitutional pitfalls and matters of form rather than of substance. So far as the substance is concerned the criticisms have about all been directed to Section 10, exempting certain provisions from the operation of the act and most of these have been reasonable in my opinion. Why restrict the sale of preparations of Coca that contain no Cocaine? Or Coca Leaves from which the cocaine has been extracted? Or of compound medicinal tablets, pills, etc., in which cocaine, morphine, etc., are combined practically in such a way as to prevent the use of the narcotic ingredient to satisfy the habit, and render unlikely that it will create a habit? Therefore, instead of the corresponding provision in Mr. Rosengarten's bill, which is Section 11, I submit the enclosed, based upon careful consideration of all the suggestions I have received. Please note the punctuation—the attempt to divide classifications by semicolons. Please also note that I have incorporated a provision not contained in any suggestion and which is entirely original with me, to wit: That a compound medicinal tablet, etc., to be exempt must contain at least as much non-narcotic medicinal ingredient as it does of the narcotic ingredients mentioned in the statute. I think this will prevent the exemptions from being abused or perverted.

"If it could have been my privilege to attend this meeting of the Conference I should urge that the Conference make the amendments to the Rosengarten bill that I suggest in this letter and adopt it as its last word upon the subject. I understand the attorney who drew the Rosengarten bill attempted to do nothing more than to put H. R. 28277 in such form as to relieve the latter of all ambiguities, inconsistencies and possible constitutional pitfalls. To my mind he has done his work admirably, and the only changes I suggest are matters of substance which I believe all who have studied the matter will concede to be important.

"I must say, however, that I have not had time to study the bill submitted by Mr. Freericks; therefore my commendations of the Rosengarten measure must not be accepted in any sense as derogatory of Mr. Freericks' suggestions. Another measure submitted by Mr. Queeny is worthy of your consideration."

I remain— Yours very truly,

(Signed) CHARLES M. WOODRUFF, Secretary.

APRIL 7, 1913.

The following resolution adopted by the Executive Committee was reported to the Conference, and on motion of Mr. Kline, seconded by Mr. Dohme, was adopted by the Conference:

Resolved, That it is the sense of this Conference that the bill is not intended, and ought not to be intended, to regulate sales to consumers but only to trace narcotic drugs in commerce to the hands of the last distributor, and that the regu-

lation of the sale of such drugs to the consumer in intrastate commerce should be left entirely to state, territorial and other local laws.

The bill as reported by the Executive Committee was then read in full by the Secretary.

Dr. W. C. Woodward, Health Officer of the District of Columbia, and Chairman of the Legislative Committee of the American Medical Association, who was present, was introduced to the Conference and on motion was extended the privileges of the floor. The privileges of the floor were also extended to Mr. Samuel Rosengarten, Philadelphia.

It was then moved by Mr. Anderson that the bill be taken up seriatim, and that it then be referred to the delegates of the various organizations represented for consideration before final adoption. The motion carried.

The reading of the first draft of the new bill as prepared by the Executive Committee precipitated an extended discussion of the question whether the Executive Committee had met the issue regarding the possible unconstitutionality of the proposed measure. In order to have a careful study made of the subject, a sub-committee consisting of Dr. James H. Beal, F. H. Freericks, Dr. W. C. Woodward and Samuel Rosengarten, was appointed to consider this subject and redraft certain provisions of the bill so as to meet the various constitutional questions raised.

Throughout the morning session of the Conference a number of matters of minor detail and character, with respect to the phraseology of the bill as prepared by the Executive Committee, were submitted to this Special Committee with authority to report at a later session.

After an extended discussion of the bill as submitted by the Executive Committee the Conference adjourned to meet at 4:00 p. m. Thursday.

(Second Session.)

The delegates met at 4:00 o'clock on the afternoon of Thursday, April 10, and when it was reported that the Special Committee was not yet ready to report, on motion of Mr. Finneran seconded by Mr. Stofer, the Conference adjourned to meet at 8:00 o'clock Thursday evening.

(Third Session.)

The Conference met at 8:00 o'clock Thursday evening. Mr. G. Frank Bailey, Baltimore, was present as proxy for Mr. F. E. Holliday, in the absence of Mr. Albert Plant, who was called home.

The Special Committee reported and the Conference devoted the evening to the consideration of the multitudinous details of the bill with the purpose of perfecting it in such manner as to make it acceptable to the members of the Conference. At midnight the Conference adjourned to meet at 9:00 o'clock Friday morning.

(Fourth Session.)

The Conference met at 9:00 o'clock Friday morning in the Gridiron Room of the New Willard Hotel, where the sessions of the Conference were held. Mr. R. C. Stofer, representing the American Association of Pharmaceutical Chemists,

who was compelled to leave, left his proxy with Mr. H. A. Stiles. The following resolution offered by Mr. Lynn, seconded by Dr. Beal, was adopted:

Resolved, That the thanks of the National Drug Trade Conference be extended to the Western Union Telegraph Company for the very courteous and unusual consideration extended us through Mr. G. L. Diven, Night General Traffic Chief, in making it possible to have our proceedings typewritten each day at the conclusion of our deliberations after the hour of midnight, when it was impossible to obtain the services of public stenographers for this purpose; and be it further

Resolved, That the Secretary be instructed to transmit a copy of these resolutions to Mr. Diven.

On motion of Dr. J. H. Beal, seconded by Mr. J. F. Finneran and Mr. W. C. Anderson, the following resolution was adopted:

1. That the Conference approve the draught of the bill before it as embodying, in the main, the substantive provisions which a Federal law regulating the distribution of opium and coca leaves and their derived narcotic should contain, but the Conference does not undertake to defend the constitutional validity of all of its several provisions.

2. That the Executive Committee is hereby instructed to present the draught to the Hon. Francis Burton Harrison, and to express to him that it is our hope that it may be embodied in a bill without greater changes in its substantive provisions than shall be necessary to cover constitutional defects and to add greater certainty and definiteness when necessary.

3. That the Executive Committee is authorized to make such minor changes in the language of the draught as may seem to them necessary on subsequent study, provided such changes do not operate to change the intent of its substantive provisions, and provided also that the members of the Conference be permitted to express their disapproval to the Conference by mail through the Secretary of such changes as the Executive Committee may make.

4. That the Conference hereby expresses to the Hon. Francis Burton Harrison its sincere appreciation of the patience he has manifested in considering the merits of the various propositions presented to him by this Conference and of the courtesy which he has uniformly extended to the Conference, its officers, committees, and individual members.

The following resolution offered by Mr. Hall, seconded by Mr. Finneran, was adopted:

Resolved, That the thanks of the Conference be extended to the Chairman, Mr. John C. Wallace, for the fair, kindly and impartial manner in which he presided over the Conference.

Dr. Dohme stated that the delegates representing the National Association of Manufacturers of Medicinal Products would recommend to their Association that its hearty support be given the Conference bill.

Mr. Hall, speaking for the delegates of the American Association of Pharmaceutical Chemists, also guaranteed the support of their organization in behalf of the Conference bill.

Dr. W. C. Woodward expressed his thanks to the Conference for the privileges extended him.

Mr. Samuel Rosengarten also expressed his appreciation of the courtesies shown him.

The bill submitted to the Executive Committee in accordance with the Beal resolution and as changed by the Committee in certain minor points under the

authority given it by the Conference and as finally submitted to the Hon. Francis B. Harrison, is attached hereto and made a part of this report.

On motion of Mr. Hall, seconded by Dr. Beal, the Conference adjourned subject to the call of the chair.

Respectfully submitted,

CHAS. J. LYNN.

Secretary pro tem.

THE COMPOSITE BILL APPROVED BY THE CONFERENCE.
A BILL

To impose a tax upon opium and coca leaves, upon imported compounds, manufactures, salts, derivatives and preparations thereof; imposing a special tax upon persons who produce, import, export, compound, manufacture, deal in, dispense, sell or give away opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof; providing for the registration of such persons with the collectors of internal revenue; and for other purposes.

Sec. 1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That on and after July first, nineteen hundred and —, every person who produces, imports, exports, manufactures, compounds, deals in, distributes, sells, dispenses or gives away opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof, shall register with the collector of internal revenue of the district his name or style, place of residence, trade or business, and the place where such trade or business is to be carried on. *Provided*, however, that the office, or if none, then the residence, of any person qualified by state or territorial law or by the laws of the District of Columbia to practice medicine, dentistry or veterinary medicine, shall be considered to be his place of business.

At the time of such registry and on or before the first day of July annually thereafter every importer, exporter, producer, manufacturer or wholesaler of opium or coca leaves or of any compound, manufacture, salt, derivative or preparation thereof, shall pay to the said collector a special tax at the rate of twenty-five dollars per annum, and every retailer of opium or coca leaves or of any compound, manufacture, salt, derivative or preparation thereof, shall pay to the said collector a special tax at the rate

of one dollar per annum. Every person who imports opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof, shall be regarded as an importer thereof. Every person who exports opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof, shall be regarded as an exporter thereof. Every person who engages in the cultivation of the poppy plant, in the United States of America, for the production of opium, shall be regarded as a producer thereof. Every person who engages in the cultivation of the coca plant, in the United States of America, for the production of coca leaves, shall be regarded as a producer thereof. Every person who refines, purifies, manufactures, or compounds with other drugs, opium or coca leaves, or any salt, derivatives or preparation thereof, for sale only to manufacturers, wholesalers or retailers, shall be regarded as a manufacturer thereof. Every person who sells opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, in unbroken importers' or manufacturers' packages for resale and not for consumption, or who sells in an individual transaction more than one ounce of opium, or more than one pound of coca leaves, or more than one-eighth of an ounce of morphine, or more than one-eighth of an ounce of cocaine, or more than one-eighth of an ounce of any salt or derivative of opium, or more than one-eighth of an ounce of any salt or derivative of coca leaves, or more than one pint of any liquid preparation, or its equivalent in solid or semi-solid preparations, of opium or coca leaves, or any salt or derivative of opium or coca leaves, or more than one hundred tablets or pills containing opium or coca leaves or any compound, salt, derivative, or preparation thereof, shall be regarded as a wholesaler thereof; *provided*, however, that any pharmacist who shall manufacture for sale in the ordinary conduct of the business of a retail pharmacy, or who shall sell, in any individual transaction, any of the articles

aforesaid to any other retailer or to any hospital or scientific institution registered under this act or who shall sell any of the articles aforesaid upon the written and signed prescription of any lawfully authorized practitioner of veterinary medicine when such prescription is issued in good faith for administration to an animal under treatment by the said practitioner in a quantity in excess of the quantities severally above specified, shall not be regarded as a manufacturer or wholesaler as herein defined. Every person, other than an importer, exporter, producer, manufacturer, or wholesaler, as herein defined, who sells, compounds, manufactures, distributes, dispenses or gives away opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, shall be regarded as a retailer thereof. Every person who pays the tax at the rate of twenty-five dollars per annum shall have the right to import, export, produce, manufacture, compound, deal in, distribute, sell or give away opium or coca leaves, or any compound, manufacture, salt derivative or preparation thereof, as an importer, exporter, producer, manufacturer, wholesaler and retailer, as herein defined, without the payment of any further special tax. Every person who pays the tax at the rate of one dollar per annum shall have the right to compound, manufacture, deal in, distribute, dispense, sell or give away opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof, as a retailer, as herein defined, without the payment of any further special tax. No person shall import, export, produce, manufacture, compound, deal in, distribute, sell, dispense, or give away opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, without having registered, and paid the special tax as required by this section; *provided*, however, that the registration and the payment of the tax as herein provided shall not be construed to relieve any person from the effect of any law of any State or Territory or of the District of Columbia or any lawful municipal ordinance regulating, prohibiting or taxing the manufacture, transportation, distribution, selling, or giving away of opium, coca leaves, their salts, derivatives or preparations.

The word "person" as used in this Act shall be construed to mean and include a partnership, association, company, or cor-

poration, as well as a natural person. That all provisions of existing law relating to special taxes, so far as applicable, including the provisions of section thirty-two hundred and forty of the Revised Statutes of the United States are hereby extended to the special tax herein imposed.

Sec. 2. That no person shall sell, or give away opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, except upon a written order of the purchaser or person to whom such article is given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue; and every person who shall accept any such order and shall sell or deliver any of said articles thereunder shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by internal revenue officers and the state and municipal officials mentioned in Section nine of this Act. Every person who shall give an order as aforesaid for any of said articles shall, at or before the time of giving such order make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers and officials aforesaid. Nothing contained in this section shall apply to the distribution or dispensing of any of said articles by lawfully authorized practitioners of medicine, dentistry or veterinary medicine in the course of their professional practice only, or to the sale, distribution or dispensing of any of said articles by pharmacists, under and in pursuance of written prescriptions of lawfully authorized practitioners of medicine, dentistry or veterinary medicine, in personal attendance upon the case for which the prescription is intended and such prescription shall be signed by said practitioner; or to the sale to the consumer on an affidavit setting forth that the same is desired for his personal use as a medicine and not for resale or distribution to others, on a form approved by the Commissioner of Internal Revenue and supplied to the consumer by the retailer, which affidavit shall be forwarded, on or before the tenth day of the month next succeeding, to the Collector of Internal Revenue in his district, and a copy of which shall be pre-

served for a period of two years and open to inspection by internal revenue officers or other officers referred to in Section nine of this Act; or to the sale, exportation, shipment or delivery of any said article by any person within the United States of America, to any person in any foreign country, or to the sale, distribution or dispensing of preparations or remedies which do not contain more than two grains of opium, or one-fourth of a grain of morphine, or one-third of a grain of heroin, or one grain of codeine, or their salts or derivatives, in one fluid ounce; or if a solid or semi-solid preparation, in one avoirdupois ounce; or to liniments, ointments, or other preparations which are prepared for external use only; *provided*, that such remedies or preparations are sold, distributed, or dispensed as medicine, and not for the purpose of evading the provisions of this Act. The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall cause suitable forms to be prepared for the purpose aforesaid. Such forms shall be furnished to collectors of internal revenue for sale by them to those persons who shall have registered and paid the special tax, as required by this Act, in their districts, respectively, and no collector shall sell any of such forms to any person other than a person who shall have registered and paid the special tax, as required by this Act, in his district and such form shall not be transferable. The price at which such forms shall be sold by said collectors shall be fixed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but shall not exceed the sum of fifty cents per hundred. Every collector shall keep an account of the number of such forms sold by him, the names of the purchasers and the number of such forms sold to each of such purchasers.

Sec. 3. That there shall be levied and collected upon all opium and coca leaves now held by any importer, exporter, producer, manufacturer, wholesaler, or retailer, as herein defined, or hereafter produced or received, an internal-revenue tax of five cents per pound or fraction of a pound on opium, and one-quarter of a cent per pound or fraction of a pound on coca leaves, in addition to any import duties on these products; and said revenue taxes shall be paid by affixing to each package or receptacle con-

taining opium or coca leaves before removal of the same from a customs warehouse, their place of manufacture or storage, or before being further manufactured or compounded, and before being offered for sale, an engraved stamp, to be affixed and cancelled in such manner as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may prescribe.

That the provisions of existing laws governing the engraving, issue, sale, accountability, effacement, cancellation and destruction of stamps relating to tobacco and snuff, as far as applicable, are hereby made to apply to the stamps provided for by this section; and all opium and coca leaves, and all packages and receptacles containing the same, not stamped as herein provided, shall be forfeited to the United States and may be sold subject to the provisions of existing law, to any person who has registered and paid the special taxes imposed by this Act; *provided*, that whenever packages of opium or coca leaves, after the payment of the internal-revenue tax thereon, shall be subdivided, further manufactured, or compounded, such sub-divisions, compounds, or manufactures may be sold or otherwise disposed of without any internal-revenue tax stamp being affixed to the packages or receptacles containing the same.

Every person registering under the provisions of this Act, shall, at the time of such registration, file with the collector of internal revenue of the district, a sworn statement showing to the best of his knowledge and belief the number of pounds of opium and coca leaves, in his possession at the date when this Act went into effect, and the said collector shall collect the revenue taxes on such opium and coca leaves at the rate of taxation as provided for by this section.

Sec. 4. That there shall be levied and collected upon all of the following described articles hereafter imported from foreign countries, to-wit, all manufactures, compounds, salts, derivatives, preparations and further manufactured products of opium or coca leaves, in addition to any import duties on said articles, an internal-revenue tax at the rate of two and one-half cents per ounce. The payment of said internal revenue tax shall be evidenced by affixing an engraved stamp to each package or receptacle containing any of the said articles, which stamp

shall be affixed and cancelled by the owner or importer of the said articles while they are in the custody of the proper custom-house officers, and such articles shall not pass out of the custody of said officers until the stamps have been affixed and cancelled; and the owner or importer shall be liable to the penal provisions prescribed by this Act. Whenever it is necessary to take any such articles, so imported, to any place for the purpose of repacking, affixing and cancelling such stamps, other than the public stores of the United States, the collector of customs of the port where they are entered shall designate a bonded warehouse to which they shall be taken, under the control of such customs officer as he may direct. And every officer of the customs who permits any such articles to pass out of his custody or control without compliance by the owner or importer thereof with the provisions of this section relating thereto, shall be deemed guilty of a misdemeanor, and shall be fined not more than five thousand dollars, or imprisoned not more than three years, or both, in the discretion of the court. The provisions of existing laws governing the engraving, issue, sale, accountability, effacement, cancellation and destruction of stamps relating to tobacco and snuff, as far as applicable, are hereby made to apply to the stamps provided for by this section and all such articles hereafter imported, to-wit, all manufactures, compounds, salts, derivatives, preparations and further manufactured products of opium or coca leaves, and all packages and receptacles contained the same, not stamped as herein provided, shall be forfeited to the United States and may be sold, subject to the provisions of existing laws, to any person who has registered and paid the special tax as required by this Act.

Sec. 5. The Collector of Internal Revenue may, in his discretion, require monthly or quarterly reports from any or all producers, importers, exporters, manufacturers, wholesalers, or retailers of their purchases of opium, coca leaves, their salts, derivatives or preparations, and from whom received during the preceding three months, but said reports shall not be required to cover a period longer than the preceding three months, which said reports shall be filed in the office of Collector of Internal Revenue for reference as herein provided.

Sec. 6. That it shall be unlawful for any

person who shall not have registered and paid the special tax as required by Section one of this Act, to ship opium or coca leaves, or any manufacture, compound, salt, derivative or preparation thereof, from any State or Territory or the District of Columbia, to any person in any other State, Territory or the District of Columbia; or for any person, in any State or Territory or the District of Columbia, who shall not have registered and paid the special tax as required by Section one of this Act, to receive from any other State or Territory or the District of Columbia or any foreign country, in original unbroken packages, any opium or coca leaves, or any manufacture, compound, salt, derivative or preparation thereof; *provided*, however, that nothing contained in this section shall apply to common carriers engaged in transporting opium or coca leaves, or any manufacture, compound, salt, derivative or preparation thereof, or to the sale or delivery of any of said articles to consumers in pursuance of written and signed prescriptions of lawfully authorized practitioners of medicine, dentistry or veterinary medicine for the treatment in good faith of patients upon whom they are in personal attendance.

Sec. 7. That under such regulations and upon the filing of such notices, entries, and bonds, as the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, may prescribe, opium or coca leaves, or any manufacture, compound, salt, derivative or preparation thereof, may be removed from a customs warehouse, or from the place of manufacture or storage, for export free of the revenue taxes imposed by Sections three and four of this Act; but upon the reimportation of any of said articles the same shall be held in the custody of the collector of customs until the required internal-revenue stamps in payment of the taxes imposed by this Act shall have been placed thereon.

Sec. 8. That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than two thousand dollars, or be imprisoned not more than five years, or both, in the discretion of the court.

That whenever on trial for violation of this act an unregistered person is shown to have, or to have had possession of any opium, coca leaves, their salts, derivatives or preparations not expressly excepted in sections two

and eleven of this act, after this act shall have gone into effect, such possession shall be deemed sufficient evidence that he is engaged in the unlawful traffic in such opium, coca leaves, their salts, derivatives or preparations unless such possession shall be explained to the satisfaction of the jury.

Sec. 9. That the returns of importers, exporters, producers, wholesalers and retailers filed in the office of the collector of the internal revenue district under Section five of this Act shall be open to inspection by internal revenue officers and such officials of any State or Territory or of any organized municipality therein, or of the District of Columbia, as shall be charged with the enforcement of any law, or municipal ordinance, regulating the sale, dispensing, dealing in, or distribution of opium or coca leaves, or any manufacture, compound, salt, derivative or preparation thereof. Each Collector of Internal Revenue is hereby authorized to furnish, upon written request, certified copies of any of said returns filed in his office to any of such officials of any State or Territory or organized municipality therein, or the District of Columbia, as shall be entitled to inspect the returns aforesaid filed in the office of the said Collector of Internal Revenue, upon the payment of a fee of one dollar for each one hundred words or fraction thereof in the copy or copies so requested. Any person who shall disclose the information contained in the said returns, except as herein expressly provided, and except for the purposes of enforcing the provisions of this Act, or for the purpose of enforcing any law of any State or Territory or the District of Columbia, or ordinance of any organized municipality therein, regulating the sale, dispensing, dealing in, or distribution of opium or coca leaves, or any compound, salt, derivative or preparation thereof, shall, on conviction, be fined or imprisoned as provided by Section eight of this Act. And collectors of internal revenue are hereby authorized to furnish, upon written request, to any person, a certified copy of the names of any or all persons who may be listed in their respective collection districts as special taxpayers under the provisions of this act, upon payment of a fee of one dollar for each one

hundred names or fraction thereof in the copy so requested.

Sec. 10. That the sum of one hundred and fifty thousand dollars, or so much thereof as may be necessary, be, and hereby is, appropriated for the purpose of carrying into effect the provisions of this act, and the Commissioner of Internal Revenue is hereby authorized to appoint such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers in the field and in the Bureau of Internal Revenue in the District of Columbia as may be necessary to enforce the provisions of this act.

Section 11. That the provisions of this act shall not apply to decocainized coca leaves, or preparations made therefrom, nor to other preparations of coca leaves which do not contain cocaine.

Sec. 12. That all laws relating to the assessment, collection, remission, and refund of internal-revenue taxes, including sections thirty-one hundred and sixty-four to thirty-one hundred and seventy-seven, Revised Statutes; thirty-one hundred and seventy-nine to thirty-two hundred and forty-three; thirty-three hundred and forty-six as amended; thirty-four hundred and forty-five to thirty-four hundred and forty-eight; thirty-four hundred and fifty to thirty-four hundred and sixty-three, all inclusive, so far as applicable to and not inconsistent with the provisions of this Act, are hereby extended and made applicable to the taxes imposed by this Act.

Sec. 13. That all the provisions of the Act of Congress approved June thirtieth, nineteen hundred and six, entitled "An Act for Preventing the Manufacture, Sale or Transportation of Adulterated or Misbranded or Poisonous or Deleterious Foods, Drugs, Medicines, and Liquors, and for Regulating Traffic therein, and for other purposes," and any amendments thereof, and of that Act approved February ninth, nineteen hundred and nine, entitled "An Act to Prohibit the Importation and Use of Opium for Other than Medicinal Purposes" and any amendments thereof, are hereby extended and made to apply, so far as applicable, to the provisions of this Act.

Report on the Progress of Pharmacy

For the Year 1912

Eleventh Installment.

Swiss Ergot of 1911.—A. Vatter gives the following data. Ergot is found most abundant on dry and sunny places 700 to 900 meters above sea level. That on winter rye is small and more uniform than on summer rye. Swiss ergot of 1911 was of excellent strength, running from 0.16 to 0.220% alkaloids by the Keller assay. The therapeutical action of the fluidextract from 1911 ergot was better than that of the harvest of 1910.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 25, 377. H. V. A.

The Vine in Culture and Medicine.—An interesting historical review of G. Ekert, of the grape, the wines prepared therefrom and the products of the vine other than wine that have been used in medicine. Among the products cited are raisins, currants, oil of grape seed, the sour juice (or omphacium), extract of young shoots and tendrils and "lacrime vitis," the sap exuding in spring from the wounded stalk.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), Nos. 25 and 26, 369 and 385. H. V. A.

Masticulating Agents.—F. Berger gives historic review of various substances used as "masticatoria" by ancients, primitive people and also at present time. He quotes list of chewing agents published by Hahn in 1839, who groups these into those of acrid taste like pellitory and tobacco; burning taste like ginger and mustard seed; aromatic, like cloves and mastic; tonic and astringent, like cinchona and rhatany; and deodorants, like roasted coffee and wood charcoal. He mentions the chewing of cloves by the Chinese since B. C. 220; of mastic by the Mohammedans; of coca by the Peruvians, and then gives special attention to the three great masticatoria used at the present time; tobacco, chicle, and betel nut. Of the latter he gives many interesting details.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), Nos. 26 and 27, 389 and 401. H. V. A.

Llujta.—This is the Bolivian name of the alkaline material used by the coca chewers of the Andes, and represents the ash of *Chenopodium Quino*, coca stems, banana stalks or even burnt lime kneaded with potato (or some other starch) and water and dried.

A sample brought from Bolivia by Dr. Herzog has been examined by Hartwich and Wichmann, who find it in grayish tablet-like pieces about 10 cm. x 3 cm. x 4 mm. in size. The starch as shown under the microscope is from wheat; while qualitative analysis showed presence of potassium, sodium, magnesium, calcium, aluminum, iron, carbonates, chlorides, sulphates, phosphates and silicates. Titration showed an alkalinity of 0.965% (calculated as K_2CO_3), while the water insoluble part represented 22.32% $CaCO_3$.

Effect of Trypsin on the sprouting and growth of Plants.—A botanical investigation by Dr. Strujev, who finds that corn and sunflower seeds scarcely sprout in perfectly sterile artificial soils but will sprout if a trypsin solution is added. The proper strength of such solution is 2% and the proper amount is 0.5 to 2 cc. to each pair of seeds (the amount of nutritive fluid used not being stated). More than 2 cc. of the trypsin solution does not produce as large a plant as does 0.5 to 2 cc.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), Nos. 29 and 30, 433 and 449. H. V. A.

Honey: Microscopic Examination.—Dr. C. Fehlmann shows the value in food analysis of the microscopical examination of honey as every natural honey contains pollen. Indeed from the character of the pollen one can determine the geographic source of the honey and even the time of year when stored by the bee. Of course, natural honey diluted with glucose will still show the pollen; hence the plan has its limitations. Besides pollen grains, the sediment from diluted honey shows starch grains; when the bees (in early

spring) are fed on meal and sugar, shows specks of ultramarine; when they have been fed on sugar, shows spores of fungi, when carelessly prepared. The paper closes with the kind of pollen found in natural honey obtained from different parts of Switzerland.—*Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 11, 119. H. V. A.*

Digitalis: Chemical Assay.—Dr. James Burmann, emphasizes the possibility of a chemical assay of this drug which will be at least as accurate as the total toxicity method of biological assay. He explains the difficulties of chemical assay due to diversity of glucosidal bodies found in digitalis and the uncertainty of which these glucosides produce the desired action, showing that by the Keller method it is not the true digitoxin which is estimated but another body which he (B.) calls pseudo-digitoxin. He points out the errors in the assays of Fromme and of Ecalle and summarizes precautions necessary to successful assay, all of which (for example, "Do not use rubber corks in distillation") are self-evident to the trained analyst. He then proceeds to give his method which unfortunately was performed only with a "Dialyse Digitale" in which he is presumably commercially interested. He mixes 100 gm. of this "dialyse" with 60 gm. absolute alcohol and after bringing the fluid to 190 gm. with 50% alcohol, adds 30 gm. solution lead subacetate (Sp. Gr. 1.240) and 30 gm. absolute alcohol. The precipitate of organic matter thus formed is filtered off and 125 gm. of the filtrate (representing 50 gms. of the "dialyse" after removal of lead with hydrogen sulphide is concentrated at not more than 50° C. to 50 cc., then made alkaline with 2 cc. 10% ammonia and shaken out with chloroform. The chloroformic extract is evaporated, is redissolved in 3 gm. chloroform, 7 gm. ether is then added and the glucosides are precipitated from this solution by addition of 50 gm. petroleum ether. This precipitate which is then dried to constant weight, is a white amorphous powder responding to all the reactions for digitoxin and on recrystallization from absolute alcohol solution by addition of a little water, shows under the microscope the crystalline rosettes of pseudo-digitoxin and the prismatic tables of true digitoxin. By fractional crystallization, Burmann has separated enough of the two glucosides to estimate the

melting points which he finds to be 145°-150° and 247.5° respectively.

Comparing what he calls his "total assay" with the assay by the Keller method on the same dialysate, he deduces the amount of true digitoxin and gives the following table:

	I	II	III	IV
Total Assay..	0.152%	0.148%	0.118%	0.111%
Keller Assay.	0.118%	0.116%	0.091%	0.085%
Digitoxin ...	0.032%	0.032%	0.027%	0.026%

He has tested the accuracy of his scheme by running assays of the dialysate, to which he added definite amounts of Merck's crystalline digitoxin and finds that increased weight of the glucosidal mixture agrees with the weight of added digitoxin. The paper concludes with reports of biological assays of the dialysate and of the pseudo-digitoxin of Keller and the total digitoxin obtained therefrom.—*Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 11, 153. H. V. A.*

Tuberculous Sputum: Bacteriological Examination by the Antiformin Method.—Haass describes the rapid method of preparing tuberculous sputum for bacteriological examination by use of antiformin, which is the trade name for a mixture of solution of chromated soda and alkali. This mixture dissolves mucous, hair, wool, silk, nail tissue, keratin and is therefore an ideal fluid to dissolve the ingredients of the sputum other than bacteria. Moreover, while antiformin does dissolve some bacteria, the bacilli of tuberculosis are not dissolved; thus rendering its identification still easier. The manipulation consists of adding to 10 cc. sputum 20 cc. 10% antiformin, and after shaking, the mixture is warmed to 40° on water bath for one-half hour, or until completely homogeneous. Then add 5 cc. ligroin, shake vigorously and warm to 40° on water bath till the ligroin separates as clear layer, when a sample of the material at the point of contact of the two liquids is transferred on a platinum spatula to a cover glass and examined microscopically after staining. The article traces the history of the process and has a good bibliography.—*Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 12, 174. H. V. A.*

Antitrypsic and Meiotagmic Reactions.—M. C. Delenze explains these two types of modern diagnostic tests. The first is based on the fact that while the trypsin of normal

serum readily converts casein into a form which will not precipitate with acids, the sera of cancerous patients does not thus affect alkaline casein solutions.

The meiostagnic reaction is a comparison of the surface tension (as expressed in number of drops of fluid to a certain volume) of mixtures of the antigens on one hand and the anticorps on the other; the first being extracts from the diseased tissue while the latter are usually blood sera. The reaction is of service in diagnosis of syphilis, typhoid fever and tuberculosis.

The article gives details of manipulation of both reactions.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 13, 182. H. V. A.

Laminated Artificial Silk.—Dr. A. Verda discusses transparent cellulose which has recently come into the European market under such trade names as *gaudafil*, *aseptafil* and *cellamine*. It comes in thin sheets, impervious to water, oil and air but permits passage of steam. It can be used as a wrapping instead of parchment, as protective covering for wounds in place of taffeta or sheet gutta percha (since it can be sterilized) and as a dialyzing membrane.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 20, 301. H. V. A.

Quino-Quino Balsam.—Hartwich and Jama (Schweiz. Wschr. f. Chem. u. Pharm. 1909, Nos. 41 and 42), described this Bolivian balsam derived from *Myroxylon balsamum* var. *punctatum*, while Riedel (Mentor, 1912, 33), describes a balsam supplied from the same plant, having distinctly different properties. Hartwich now discusses these differences and decides that while both were from the same tree, his was the exudation from the trunk while Riedel's was from the fruit.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 21, 312. H. V. A.

Reactions of Hydrococrulignone.—Taking as text a paper by J. Mair (Proc. Chem. Soc., London, 26, 115), on the above-named chemical, Professor E. Schär shows the similarity in its action on copper salts and hydrogen dioxide to those shown by guaiac with the same chemicals (Schär's Reaction). He, therefore, reviews his work, giving bibliography from 1868 to date and points out that when certain bodies yielding typical colors on oxidation (e. g. hydrococrulignone, guaiac—resin, alum, pyragallol and guaiacol) are brought in contact with catalytic agents

(such as copper ferrous and platinum salts, colloidal solutions of metallic gold and platinum) or peroxydases (e. g. blood pigments, malt enzyme, laccase and enzymes of acacia—and with a third substance (such as hydrogen peroxide, cyanogen compounds or even alkaloids or other feeble alkalies) the characteristic coloration occurs.

The presence of three types of chemicals is essential, any two of these producing no more than a faint coloration; and the oxidation (except when hydrogen dioxide is used) can be ascribed to the oxygen of the air. As to the hydrococrulignone reaction,—the changing from green-yellow $C_{12}H_{10}O_6$ to red cocrulignone $C_{12}H_{10}O_4$ when treated with hydrocyanic acid and copper sulphate—he points out that it can be used as a test for cyanides; for blood (controlling Schär's test) and for free alkaloids.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), Nos. 22 and 23, 321 and 337. H. V. A.

The Fat of Roasted Coffee.—To prevent use of added fats in glazing roasted coffee, the Swiss food regulations direct that in maceration of the roasted bean with ether, the dried ethereal extract should not weigh more than 1.5%. Dr. Verda, of Lugano, shows that strongly roasted coffee (black coffee) preferred by the people of the Canton of Tessin gives considerably more than the above amount of extract; samples of Equador, Santos, Porto Rico and Salvadore coffee roasted by the writer to the shade of "blackness" preferred in Lugano yielded from 2.98 to 4.08% of ether extract. He, therefore, thinks that the present regulations are too severe and that rather than amount of ethereal extract, the refractive index of same should be considered.—Schweiz. Wschr. f. Chem. u. Pharm., L. (1912), No. 22, 326. H. V. A.

Eau de Cologne: Origin, Manufacture and Aging.—Dr. Hermann Prinz thinks the first manufacturer of this preparation was Johann Maria Farina, an Italian, who started the manufacture of cologne water, in Cologne on the Rhine, in 1709. The same firm still carries on business and by general consent of the mercantile and lay world, the bottles carrying its label are looked upon as containing "genuine" Eau de Cologne. The genuine article is acid in reaction, but alkaline and neutral Eau de Colognes are found in the market. Storing and aging vessels should be of

glass or well-seasoned, oak wood, spirit barrels. The alcohol must be free from fusel oil and a method is given for its detection. Only the best quality of essential oils are to be used and only distilled aromatic waters. The finished product should be left undisturbed for a year at least. Four formulas are given.—*Nat. Drugg.*, January, 1912, 9-11. C. M. S.

Asafoetida: Adulterations—Plea for the Establishment of a Separate Standard for Powdered Asafoetida.—Asafoetida is one of the most grossly adulterated drugs imported into the country, says Arthur W. Reum, the foreign material giving high ash and small resin tests. Great variety of color is noticeable in the original cases, some tears are nearly white or cream color, others are brown and the whole mass frequently streaked and spotted with red and on some occasions blue dye. The light colored portions are soft and sticky and are commonly wrapped in coarse cloth or the skins of animals. The dark-colored portions are hard and brittle. Wood, gypsum and earthy matter may be found in the mass. Pieces of a root resembling sumbul, several inches long and from one to two inches in diameter, were found in some cases. Analysis made of a sample received in a granular condition, dark in color and very hard, gave an ash content of 65%, due to a large amount of mineral substance and only 11% of alcohol soluble resin. Six analyses of samples taken from original cases gave the following results:

	Alcohol Solubility	Ash
1.....	33.80%	10.8%
2.....	28.60% .....	.....
3.....	38.40%	9.5%
4.....	39.10%	14.7%
5.....	50.98%	31.0%
6.....	53.47%	28.4%

A fairly reliable method for the selection of a sample which shall represent accurately the resin and ash content is to select three or four samples, each comprising six to a dozen different parts of the entire mass. These samples may be well mixed and the assay made from the mixture or each may be assayed separately and the results averaged.

For the alcohol extraction, a weighed quantity may be placed on counter-balanced filter papers and washed with hot alcohol to exhaustion; the residue then dried and weighed. Or ten gm. of the drug may be placed in a shell and extracted in a continuous extrac-

tion apparatus and the dried residue then weighed. In grinding asafoetida, from 30% to 50% of drying material, such as starch, is added. This reduces alcohol solubility but does materially affect the ash. Ten assayed samples containing starch gave alcohol soluble material as follows: 17.5%, 37.4%, 22.1%, 19.3%, 20.7%, 23.8%, 18.8%, 19.3%, 11.3%, 14.5%. The ash ranged from 9.2% to 25.7%, with only two below 15%. It is not possible to have the powdered drug answer the requirements of the whole drug, hence it would be well to establish a special standard for the powder, it being extensively used in condition powders and stock foods.—*Pac. Pharm.*, Sept., 1912, 118-119. C. M. S.

Ash Determination of Vegetable Drugs: Desirability of Acid Ash Determination and Uniform Method.—An editorial emphasizes the value of ash determination of powdered drugs, as an indication of quality and purity and points out the necessity of a determination of the acid insoluble ash, as well. The acid insoluble portion remaining after treatment of the ash with hydrochloric acid, showing practically the relative proportion of sand, dirt, etc., in the sample. Much attention has been given to the determination of ash content of drugs by many investigators, both foreign and in the United States, but without specifying methods. The true ash content of a drug is found when the sample is free of all foreign matter, for which reason a washed sample should be used. The cleansing process must, of course, be carried on with extreme care, that none of the tissue be carried away, that none of the salts of the drug be leached out or washed away and that no foreign salts be added. Rapid rinsing with distilled water in a wicker wire container would, no doubt, answer. The washed sample must then be dried to a constant weight at 100° C. Then the absolute ash content of the sample may be had which would serve as a comparative guide to the percent of inorganic impurities in the unwashed sample. Such examination following micro-analysis with chemical tests would well determine the quality and purity of the drug.—*Pac. Pharm.*, Nov., 1912, 153. C. M. S.

Calcium Phenolsulphonate: Nature of Commercial.—Puckner, W. A., reports that, although calcium phenolsulphonate is a distinct chemical substance and is sold by sev-

eral manufacturers of chemicals, examination showed that the several brands differed considerably in composition and were unsatisfactory as to purity.—J. Am. M. Assoc., 1912, v. 59, p. 1157. M. I. W.

Magnesium Peroxide: Degree of Purity of.—Puckner, W. A., reports that while MgO_2 is advanced as a chemical formula for magnesium peroxide, examination in the laboratory showed that the several commercial brands contain only 12.17 to 25.18 percent of real magnesium peroxide.—J. Am. M. Assoc., 1912, v. 59, pp. 1157-1158.—M. I. W.

Digitalis: Duration of Clinical Action of.—Eggleston, Cary, reports a number of observations on the duration of digitalis action, and points out that this action may, and often does, persist for some considerable time after the administration of the drug has been stopped. He also states that the use of the term "cumulation" is a very loose one as at present it is being applied to widely different conditions. The general application is to express the development under small repeated doses of a drug of symptoms which are much more marked than those caused by a single small dose. In the case of digitalis cumulation would be the result of a simple summation of the amounts fixed and absorbed in the tissues, probably of the heart, and, owing to the firmness of this fixation, the intake is in excess of the elimination.—J. Am. M. Assoc., 1912, v. 59, pp. 1352-1357. M. I. W.

Oxygen: Action of.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 807), points out that while oxygen therapy has in some way or another entered into the experience of almost every physician, few have a real conception of the actual rôle which the gas plays. Some recently reported observations by Benedict and Higgins have established the fact that the inhalation of oxygen lowers the pulse rate. After the oxygen is stopped the pulse-rate at once increases and almost regains the original rate in fifteen minutes. M. I. W.

Magnesium Sulphate: Laxative Action of.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 38-39), reviews some of the recently published literature on the laxative action of Epsom salts, and points out that the latest work on this problem appears to speak against any specific stimulating effect of magnesium sulphate on intestinal movement.

The unique laxative property of certain of the salts presumably cannot be explained on the basis of any exceptional effect on peristalsis. For the present, therefore, Glauber's and Epsom salts may remain in the group of the saline purgatives which owe their efficiency to the difficulty which they present to the processes of absorption. M. I. W.

Thymol: As a Remedy for Tape Worm.—Allan, W., reports the use of thymol for *Taenia saginata*, and believes it to be a satisfactory remedy because it is cheap, requires no preliminary starvation or purgation, and is less expensive than pelletierine.—J. Am. M. Assoc., 1912, v. 59, p. 197. M. I. W.

Opium: Morphine in Smoke of.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 726), calls attention to the work by Pott of the Pharmacologic Institute in Freiburg, showing that morphine can be sublimed unchanged, and therefore can actually be present in opium smoke. Pott has succeeded in demonstrating that the action of smoked opium is due to the presence of undecomposed morphine in the smoke. M. I. W.

Wood Alcohol: Toxic Properties of.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 200-201), points out that the widespread discussion which followed the series of deaths in Berlin as a consequence of the drinking of liquors contaminated with wood alcohol has again attracted attention to the scientific aspects of the toxicity of methyl alcohol. Observations recently reported appear to indicate that when reasonable doses of methyl alcohol are administered to animals the participation in metabolism scarcely exceeds three percent of the total exchange of material, and the elimination of methyl alcohol from the body is distinctly delayed, so that repeated ingestion of considerable doses of methyl alcohol may lead to a dangerous accumulation thereof in the body. M. I. W.

Sodium Chloride: Poisoning by. Campbell, O. H., reports a peculiar case of common salt poisoning in a healthy boy of five years. The mother, believing that the child had worms, gave an enema consisting of a pound of salt in a quart of water. The enema was given at 5 p. m. and within ten minutes symptoms of poisoning were evidenced. The child complained of severe pains in the head, became intensely thirsty, vomited violently, and soon began to purge violently. Within thirty minutes the boy became unconscious.

and had one convulsion after another. The symptoms increased steadily until 10 p. m., when the child died.—*J. Am. M. Assoc.*, 1912, v. 59, p. 1290. M. I. W.

Sodium Chloride Poisoning.—An editorial (*J. Am. M. Assoc.*, 1912, v. 59, p. 1297), calls attention to a second case of sodium chloride poisoning reported by Brooks (*Arch. Int. Med.*, November, 1910, p. 577), in which the patient received about nine ounces of salt. M. I. W.

Pyramidon.—An editorial (*J. Am. M. Assoc.*, 1912, v. 59, pp. 461-462), calls attention to the advertisements in newspapers of a new "headache cure," the advertising slogan of which is that it "contains no acetanilid or phenacetin." The name of the preparation is midol, and on examination it was found to depend essentially on pyramidon for its therapeutic effects. A second preparation of the patent medicine type in which pyramidon is the essential drug, is nurito. A quantitative examination indicates that the composition of this nurito is essentially as follows: Milk sugar, 34 percent; phenolphthalein, 6 percent; and pyramidon, 60 percent. M. I. W.

Lead Poisoning.—Hamilton, Alice, in a discussion of industrial lead-poisoning in the light of recent studies, asserts that this is a disease with which the ordinary practitioner has very little familiarity. Plumbism is fairly common in industrial centers and not only causes permanent disability or death, but also decidedly influences the course of other diseases. Its importance is undeniable and the reason why it has escaped careful study is not apparent. Weyl's lead tabs is far from being a rare condition in this country, and instances of it can be found in every town where there are lead industries of a dangerous character.—*J. Am. M. Assoc.*, 1912, v. 59, pp. 777-782. M. I. W.

Pyramidon Poisoning.—Bechet, Paul E., reports a case of extensive dermatitis medicamentosa, following the use of pyramidon in the "patent medicine" form of midol. The patient, a man aged 52, had been taking acetanilid for several years. After taking midol in full doses for four days, he began to have considerable pruritus and irritation back of the ears and on the neck, which within a few hours involved the trunk. The condition progressively increased, and at the

end of three days there was an extensive erythematopapular eruption on the face, chest and back. There were also several itchy wheals which were over an inch in diameter. The patient was forbidden the use of midol and treated with an alkaline laxative mixture with local applications of magnesia and zinc oxide, and within three days the eruption had largely subsided.—*J. Am. M. Assoc.*, 1912, v. 59, p. 1289. M. I. W.

Antiseptics: Influence on Intestinal Flora.—Harris, Norman M., reviews some of the work that has been done to determine the influence of antiseptics on the intestinal flora, and reports a series of experiments made by him at the request of the Council on Pharmacy and Chemistry of the A. M. A., with the object of testing the combined values of methods and drugs in the field of intestinal antiseptics. He concludes that in spite of so-called "favorable reduction," the results obtained by him plainly indicate that antiseptic drugs fail to kill off per gram of feces, millions of indol-producing bacteria, whose habitat is the large intestine. He agrees with Friedenwald and Leitz that regulations of diet, together with the evacuation of the bowels, is the most effectual method that we have on hand of reducing the bacterial content of the large intestine.—*J. Am. M. Assoc.*, 1912, v. 59, pp. 1344-1349. M. I. W.

Enzymes: Descriptive Definition for.—An editorial (*J. Am. M. Assoc.*, 1912, v. 59, p. 282), points out that enzyme and substrate, according to Fischer, bear a relation to one another like that of a key to its lock. Not all keys will open all locks. The configuration of the two factors must be appropriate. Decidedly forceful and unquestionably unique is the description of the distinctive peculiarity of enzymes lately published by the London physiologist, Professor Halliburton, in a primer intended for the general reader. "We may roughly compare an enzyme," he writes, "to an ill-disposed person who comes into a room full of good-natured people, and who succeeds in setting them all by the ears. He has produced a change in them without undergoing any change himself, by his mere presence. He is, moreover, able to repeat the process over and over again in fresh roomfuls ad infinitum." Perhaps the expression "enzyme" will now acquire a wider usefulness as a descriptive term for a not entirely unknown type of human being.

Iodides: Effects of.—Capps, Joseph A., discusses the use of iodides on the circulation and blood vessels in arterio-sclerosis. He reviews the several theories that have been propounded in connection with the action of iodides, and concludes that iodides in therapeutic doses are not active vasodilators and when long continued do not materially effect blood-pressure. They probably owe their beneficial influence in syphilitic arteriosclerosis to the absorption of the cellular exudate in the arteries.—J. Am. M. Assoc., 1912, v. 59, pp. 1350-1352. M. I. W.

Filterable Viruses: Nature of.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 1459-1460), in commenting on a summary of the present status of our knowledge of the filterable viruses, points out that at the present time there are nearly thirty diseases of human, plant and animal life which have been demonstrated as being due to such viruses. Of those which affect man there are foot-and-mouth disease, rabies, vaccinia, variola, yellow fever, molluscum contagiosum, dengue fever, verruca vulgaris, trachoma, sand-fly or three-days fever, poliomyelitis, typhus fever and possibly measles and scarlet fever. These filterable viruses are probably so small as to be practically invisible and pass through the pores of a Berkefeld or a Chamberland filter, which will retain even very small cocci. M. I. W.

Poliomyelitis: Transmission of.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 1380-1381), reviews some of the recent work on poliomyelitis, and calls attention to the observations of M. J. Rosenau which indicate that the stable-fly, *Stomoxys calcitrans*, plays an important part as a transmitter of this disease. The discovery that the stable-fly is an important agent in transmitting the disease will make it a comparatively easy matter to prevent infection and to open an avenue for the eventual control of this dread disease. M. I. W.

Waters: The Relation of Interstate to the Spread of Disease.—McLaughlin, Allan J., discusses the relation of interstate waters to the spread of typhoid, and points out that while the average death rates from typhoid

fever per hundred thousand of population in European cities was 5.30 in 1909 and 4.50 in 1910, there is an aggregate total of 25 deaths per hundred thousand annually in the larger cities of the United States. He believes that more attention should be paid to the securing of pure drinking-water and to such treatment of sewage as is found necessary to prevent the spread of disease. J. Am. M. Assoc., 1912, v. 59, pp. 1425-1429. M. I. W.

Rats: Necessity for Extermination.—Rucker, W. C., discusses the necessity for rodent extermination in American seaports, and points out that the rodent is the twentieth-century anachronism. He is as archaic as the neolithic midden to which he is coeval, and yet today we tolerate him, permit him to devastate our storehouses and to act as the intermediary vehicle for the transference of the organisms of disease between his loathsome carcass and the body of man. It has been necessary for plague to ravage the world many times before man has learned well the lesson that the rat and his confrères, the mouse and the ground-squirrel, are among the most deadly animals with which he has to deal.—J. Am. M. Assoc., 1912, v. 59, pp. 243-244. M. I. W.

Disinfectants: Standardization of.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 667), comments on the method of standardizing disinfectants with and without organic matter, and expresses the hope that the modified method proposed by Anderson and McClintic will be generally adopted, and that health officials and others having occasion to recommend or to purchase disinfectants will base their opinions on the efficiency, or otherwise, as demonstrated by this method. M. I. W.

Acetone: Tests for.—Rosenbloom, Jacob, points out that in the presence of protein, Lieben's and Gunning's test for acetone are negative and require the use of distillate for positive results. He also calls attention to the Frommer test which can be applied to the urine direct and does not react with diacetic acid if the heating is not carried too high.—J. Am. M. Assoc., 1912, v. 59, p. 445. M. I. W.

The Pharmacist and the Law

SCOPE AND APPLICATION OF THE FEDERAL FOOD AND DRUGS ACT.

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On April 7, 1913, the United States Supreme Court rendered a unanimous decision interpreting the Federal Food and Drugs Act of June 30, 1906, the practical significance of which can hardly be overestimated. Every manufacturer of and dealer in foods and drugs should carefully read this decision and note its operation on the conduct of his business.

The following brief analysis and explanation may serve to indicate the salient points of this decision of our highest court and its practical application.

The situation presented is as follows:

A wholesale grocer in Chicago, Illinois, shipped to a retail merchant in Oregon, Dane County, Wisconsin, a number of tin cans of "Karo Corn Syrup," enclosed in the usual wooden box or packing case. When the retailer received the goods at his store he took the cans from the box, placed them on the shelves for sale at retail and destroyed the wooden shipping box, as was customary. These cans were labeled to conform to the regulation made by the three Secretaries under the Federal Food and Drugs Act. The Wisconsin or state law, however, prescribed a different method of labeling for such a product, and permitted its sale or exposure or offering for sale only when so labeled, and the State labeling requirement conflicted with the Federal labeling requirement.

The question presented is: Must the labels on these cans, conforming to the Federal but not to the State law, be removed and the cans relabeled to conform to the State law before the retailer, *who was also the importer*, may lawfully sell or offer or expose for sale these cans at retail in Wisconsin?

The Supreme Court decides that the sale, and offering or exposing for sale of these cans by the importer, the retailer, is a part of interstate commerce within the purview of the Federal Food and Drugs Act. That inasmuch as the cans were labeled to con-

form to the Federal Food and Drugs Act, the Wisconsin law prohibiting the sale or offering or exposing for sale of these articles unless labeled in accordance with the Wisconsin Statute is an act in excess of its legitimate power and invalid.

To use the words of the Court:

"To permit such regulation as is embodied in this statute is to permit a State to discredit and burden legitimate Federal regulations of interstate commerce, to destroy rights arising out of the Federal Statute which have accrued both to the Government and the Shipper, and to impair the effect of a Federal law which has been enacted under the Constitutional power of Congress over the subject."

The court only condemns state laws which conflict with the Federal law which "impose burdens upon or discriminate against interstate commerce" and interfere with or frustrate the operation of the acts of Congress. The power of the State to make regulations concerning the same subject-matter, reasonable in their terms and not in conflict with the acts of Congress, is recognized and reaffirmed.

The points established by the decision are as follows:

1. Articles remaining in the possession of the importer, received by him in interstate commerce, are within interstate commerce until sold by him and are, until such sale, subject to the Federal act. It makes no difference whether the retail containers have been taken out of the packing box by the importer or not. It is sufficient if the articles remain *unsold* in the hands of the importer. The importer may offer or expose for sale and sell the articles and the State law cannot interfere, if the articles conform to the Federal law. The article would only be divested of its interstate character *after the first sale by the importer within the State into which it was imported*. Therefore, as in the case decided, a shipment (conforming to the Federal law) in interstate commerce to the retailer who resells or offers for sale to the consumer is protected by and subject to the Federal act and the State law cannot interfere with such sale or offering for sale by the retailer.

2. The immediate container of the article intended for consumption by the public is the container which must bear the required label-

ing statements. The brands regulated are on the packages intended to reach the purchaser or consumer. As the court well remarks—"This is the only practical or sensible construction of the act." The label is the means of vindication or the basis of punishment in determining the character of the interstate shipment dealt with by Congress. To limit these requirements to the outside packing box "would render the act nugatory and its provisions wholly inadequate to accomplish the purposes for which it was passed."

The court dismisses the contention that inasmuch as the cans had been removed from the boxes in which they had been shipped in interstate commerce, they had, therefore, under the "original package" doctrine, passed from the jurisdiction of Congress, by pointing out that Congress has expressly determined the operation of the Federal act in the act itself.

3. The Court finally determines that the purpose of the Federal law is to protect the consumer. "The object of the statute is to prevent the misuse of the facilities of interstate commerce in conveying to and placing before the consumer misbranded and adulterated articles of medicine or food." The making certain of the purpose of the Federal law is extremely timely and significant in view of the fact that one of the arguments insistently advanced against uniformity of the National and State laws is that the purposes of the National and State laws, respectively, are separate and distinct. *The purpose, in each instance, is the same,—to protect the consumer.*

WHAT THIS DECISION MEANS TO THE MANUFACTURER.

1. *If the manufacturer ships his products in interstate commerce to a retailer in another state, and the retailer resells to the consumer, the products being labeled to conform to the Federal law, the whole transaction would be in interstate commerce, subject to and protected by the Federal law, and the State labeling law could not interfere.*

2. *If the manufacturer ships his products in interstate commerce to a jobber in another state and the jobber resells to a local retailer the situation would be different. The sale by the retailer, in this instance, would be subject to the State law. The first sale by the importer, the jobber, would be subject to the*

Federal law, but the resale by the retailer would be subject to the State law.

3. *If the manufacturer ships his products in interstate commerce to a jobber in another State and the jobber reships the whole or part of these products in interstate commerce to a retailer in another State, and the retailer resells to the consumer the situation will be the same as in No. 1, above. The shipment by the manufacturer to the jobber is an act of interstate commerce and subject to the Federal law, as is also the first sale by the jobber, the importer, to the retailer, and the reshipment by the jobber to the retailer in another state is itself an act of interstate commerce, and subject to the Federal law, as is also the first sale by the retailer, also the importer, to the consumer.*

4. *If the manufacturer sells his products to the wholesaler or retailer in the State of manufacture, such sale would be subject to the State law.*

It will be noted, therefore, that if the State law is not in harmony with the Federal law, but is particularly burdensome, local manufacturers may be placed in a decidedly unfavorable position, in competing with goods shipped into the State protected by the Federal law.

It will be noted, also, that shipments in interstate commerce direct to the retailer for sale in States where the local law is not in harmony with the Federal law are likely to be greatly increased.

It should be borne in mind that the question of adulteration is not considered in this decision. There can be no doubt that a question of adulteration would be determined as the court determines the question of labeling.

CONCLUSION.

The need for uniform laws now exists, as never before, an imperative need, to facilitate and equalize the various methods of distribution of foods and drugs. It is no longer a question of striving for a commercial Utopia, in the attainment of which we are pleased to lend our support, as a commendable movement, it is now a question of fact—not of theory—for manufacturers, a question concerning the conduct of their business. Unless the State laws are made uniform with the Federal law, manufacturers will be compelled to readjust the conduct of their business to conform to the present situation.

ABSTRACTS OF LEGAL DECISIONS.

MAILABLE MATTER—MEDICINES CONTAINING MORPHINE AND ALLEGED TO BE A CURE FOR MORPHINISM.—Section 217 of the Criminal Code provides that all poisons and compositions containing poison are non-mailable, but that the Postmaster General may permit mailing under such rules and regulations as he may prescribe "as to preparation and packing" of any article previously declared to be nonmailable which are not outwardly or of their own face dangerous or injurious to life, health, or property. A prosecution was brought under this section for the alleged misuse of the mails in furtherance of a scheme to defraud in mailing matter intended to advertise the sale of a compound containing morphine for the cure of the morphine habit. It was held by the Circuit Court of Appeals that the authority of the Postmaster General to prescribe regulations for the mailing of poison or compositions containing poison not outwardly or of their own face dangerous or injurious to life, health, or property was limited to regulations as to the "preparation and packing" thereof. Post Office Department Order No. 2,923, therefore, which was promulgated February 23 1910, and prohibits the mailing of medicines containing poison except for transmission in the domestic mails from the manufacturer or dealer to licensed physicians, pharmacists, and dentists when enclosed in packages conforming to conditions prescribed, was held to be outside the jurisdiction of the Postmaster General, and invalid, and the indictment could not be sustained.

There was evidence in the case that morphinism might be treated by gradually reducing the quantity taken until no morphine was required, but that a person addicted to the morphine habit would not be expected to cure himself because he had not sufficient will power to gradually reduce the amount taken, and that the substance in the hands of an unrestrained habitué, unassisted by a physician, would not tend to cure and could not possibly cure the habit. It was therefore held error to refuse to charge that the fraud was not in the fact that morphine was employed in the treatment of the habit, but in the fact that the substance was falsely represented to be curative in itself.

It was also held to be error to refuse to charge that the fact that the substance was labeled "Poison" in unmistakable characters, and gave public notice of the fact that the substance did contain morphine, was evidence to be considered in behalf of the defendants on the question as to their purpose in selling it to habitual consumers of morphine, that the purchasers were not deceived with reference to the fact that the substance contained morphine, and that the defendants' conviction should not depend on the opinion of medical men that the substance was not curative of the habit, but that if the jury found that whether the substance was remedial in character when exhibited as part of the treatment of morphinism was merely a matter of opinion among medical men the defendants must be acquitted.

Bruce v. United States, C. C. A., 202 Fed. 98.

WARRANTY—FERMENTATION OF FRUIT-JUICE.—Action was brought by the purchaser to recover the purchase price of unfermented grape-juice sold with a warranty that the seller agreed to protect the purchaser against any fermentation. The plaintiff claimed that the defendant knew that it was proposed to use the grape-juice for the purpose of making soda water. This was denied by the defendant. Both parties knew that the juice was unconcentrated. The evidence showed that, when used to flavor bottle soda water, the soda water would sour in a short time, but just how soon did not appear. There was evidence that some mention was made at the time of the sale of using the juice as a flavor for soda water, but it was held that, in the absence of any evidence that the seller knew that the buyer expected to use it in making bottled soda water, or represented that when so used it would never ferment, this was not sufficient to give rise to an implied warranty that when so used it would not ferment. Testimony of witnesses familiar with processes of manufacturing and dealing in bottled unfermented grape-juice, that a warranty that unfermented grape-juice would not ferment while in sealed bottles, nor for a reasonable time after the bottles were opened, was held to be admissible as bearing on the intention of the parties.

Turlock Fruit-Juice Co., v. Pacific & Puget Sound Bottling Co., Washington Supreme Court, 127 Pac. 812.

INSECTICIDE ACT—MEANING OF "INERT."—In proceedings for the condemnation of a number of packages of "Roach Food" the question for determination was the meaning of the word "inert" in clause 3, par. 4, p. 8 of the Insecticide Act of 1910. That section provides that an insecticide, other than paris green or lead arsenate, shall be considered misbranded if it consists wholly or in part of "an inert substance or substances which do not prevent, destroy, repel or mitigate insects," unless the names and percentage amounts of such inert ingredients are stated on the label, or the names and percentage amounts of every ingredient having insecticidal properties and the total percentage of all inert ingredients are so stated. It was held that the word "inert," as so used, is not limited in meaning to a substance which serves no useful purpose in the compound, but includes any substance which is not in itself capable of killing or repelling insects, although it may be useful and used for the purpose of attracting them.

United States v. Thirty Dozen Packages of Roach Food, Maryland District Court, 202 Fed. 271.

CONDITIONAL SALE OF DRUG STOCK TO BE SOLD AT RETAIL.—A retail stock of drugs contained in a drug store was sold at the price of \$2,000, to be paid in monthly installments of not less than \$20 each, the stock to be sold by the purchasers at retail. On default of the purchasers to pay one of the installments, action of replevin was brought to regain possession of the stock. It was admitted by the parties that, through their mutual mistake, and the mistake of the scrivener who drafted the contract, a provision that the title should remain in the vendor until full payment of the purchase price, and upon default of the vendees the vendor should be entitled to possession, was omitted from the document. In considering the sufficiency of the complaint the court therefore treated this omitted stipulation as included. The contention in the case was as to the construction of the agreement. The seller contended that the contract made a conditional sale, and the ownership was his till the price was paid. The purchaser contended that the delivery of the goods with the provision that they should be sold by retail was inconsistent with a conditional sale; and that the title passed to the purchasers.

The court sustained the seller's contention. A sale of a stock of goods to be sold at retail authorizes the vendee to sell them in the regular course of trade at retail, and the purchaser will take title thereto. But where title is retained in the vendor, with the privilege to the vendee to sell the goods at retail, the sale of such a stock of goods in bulk is not authorized. It appeared that at least \$200 worth of goods originally purchased under the conditional contract were still on hand. As to that property, the vendor or his assignee was entitled to recover. As to the property after-acquired, the court expressed no opinion.

Andre v. Murray, Indiana Supreme Court, 101 N. E. 81.

ORDER FOR SODA FOUNTAIN—NECESSITY FOR ACCEPTANCE.—Action was brought for damages for the alleged breach of a contract for the sale of a soda fountain. The order was given to a traveling salesman of the seller, the order stating that the price was to be \$300, payable by a cash payment of \$25 and the balance in monthly installments, and that all orders were subject to the approval of the home office. The seller refused to accept it on the ground that the price should have been \$350, and made out a new order at that price which the purchaser refused to sign, sending a check for \$25, and demanding its return if his wishes were not acceded to. Pending negotiations, the seller cashed the check and subsequently sent the purchaser a draft for \$25, which he cashed, writing the seller that he refused to accept it, but would sue for damages for failing to comply with the terms of his order. Upon the trial he claimed that he had credited the amount of the draft on his claim for damages. That was done, however, without the seller's consent. It was held that the clause as to the approval of the order by the home office was a reasonable one, and the order did not become a binding contract until such acceptance. No approval from delay could be inferred, and the plaintiff by his acceptance of the draft for \$25 in effect rescinded his order. He was therefore held not entitled to damages.

Crowder v. Tolerton & Warfield Co., Supreme Court of Nebraska, 138 N. W. 151.

REGULATION OF SALE OF POISONS—LIMITATION ON POWER OF BOARD OF PHARMACY TO PROHIBIT SALE.—The validity of the conviction of a grocer of a violation of the California "poison act" of 1907, and of a resolution and regulation prescribed by the state board of pharmacy under and by virtue of certain provisions of the poison act by the sale of "ant poison," containing arsenic, was challenged. The poison act empowered the board to restrict or prohibit the retail sale of any poison by rules "not inconsistent with the laws of this state," and the schedule annexed to it contained a list at the head of which stood "arsenic, its compounds and preparations." The California pharmacy act of 1905 empowered the board "to regulate the sale of poisons." In 1909, section 16 of that act was amended, and it was provided that "the following drugs, medicines and chemicals may be sold by grocers and dealers generally without restriction." An enumeration of articles following concluded with "insect powder, fly paper, ant paper," etc., "when prepared and sold only in original and unbroken packages and labeled with the official poison labels." It was held that these acts were in *pari materia*, and must be harmonized, if possible, and that the board could not prohibit the sale of ant poison except by licensed pharmacists.

Ex parte Potter, California Supreme Court, 130 Pac. 721.



ABSTRACT OF U. S. TREASURY DECISIONS.

T. D. 1543. STANDARDS FOR DETERMINING SPECIAL TAX LIABILITY.

The Office of the Commissioner of Internal Revenue has compiled the various rulings defining the standards used in determining special tax liability of manufacturers of and dealers in flavoring extracts, soda-water sirup, etc., containing alcohol, and alcoholic compounds containing medicinal ingredients.

Section 3246, Revised Statutes, exempts apothecaries from the payment of special tax "as to wines or spirituous liquors which they use exclusively in the preparation or making

up of medicines." Under this section no special-tax liability is incurred on account of the manufacture or sale of essences, extracts, and soft drink sirups which contain no more alcohol than is necessary to cut the oils or extract the desired active principles and hold them in solution, provided such products are nonpotable in the condition as put out by the manufacturer.

In order for a manufacturer or dealer to be exempt under Section 3246 from special-tax liability for the manufacture or sale of an alcoholic compound containing drugs or medicines. (1) Alcohol: The preparation must contain no more alcohol than is necessary for extraction, solution, or preservation. (2) Medicaments: As the minimum dosage each one ounce liquid of the preparation must contain approximately an average U. S. P. dose for an adult of some drug or drugs of recognized therapeutic value, either singly or in compatible combination. The exemption only applies to such compounds when sold for genuine medicinal purposes, and such compounds, as U. S. P. Jamaica ginger, for example, sold as beverages, would involve the seller in special-tax liability as a liquor dealer.

Manufacturers using a formula which calls for drugs sufficient to conform to the standard mentioned are advised by the Office to be very careful to see that the ingredients and processes used are such that the full strength called for by the formula is present in the product.

Apothecaries are permitted by Section 3246 to carry in stock distilled spirits and wines and to use same in the preparation of tinctures and other U. S. P. preparations, and in the compounding of bona fide prescriptions without special-tax liability, provided the spirits or wine is compounded prior to sale with drugs sufficient in character and amount to so change the character of the alcohol as to render it unsuitable for use as a beverage. If not so compounded special-tax liability is incurred, even if compounded on a physician's prescription and for purely medicinal purposes.

In general, the decision concludes, exemption from liability to special tax, on account of filling physicians' prescriptions, is secured to apothecaries by having the prescription itself specify the precise nature and amount of the ingredients to be added to the com-

pound, resulting in its being unfit for beverage purposes.

T. D. 1812. DENATURED ALCOHOL.

The Commissioner of Internal Revenue has granted permission to use specially denatured alcohol formula No. 19 (to 100 gallons of ethyl alcohol add 100 gallons of ethyl ether) in the preparation of a collo-dion backing for gelatin films.



NOTICES OF JUDGMENTS UNDER THE FOOD AND DRUGS ACT, U. S.

No. 1869. *Misbranding of Succotash.* Burnham & Morrill Co., Portland, Me. Product prepared from soaked lima beans. Inconspicuous announcement. No claimant appeared. Condemned and forfeited. New Jersey.

No. 1870. *Misbranding of Cheese.* Davis Bros. Cheese Co., Plymouth, Wis. Container marked 23, indicating net weight of 23 pounds, actual net weight being 21.96 pounds. Undefended. Fine \$25. Wisconsin E. D.

No. 1871. *Misbranding of Raspberry Vinegar.* Crown Cordial & Extract Co. Label indicated two dozen pints. Bottles contained 334 to 380 cubic centimeters. Decree consented to. Product released on payment of costs and filing of bond. Pennsylvania E. D.

No. 1872. *Adulteration of Tomato Catsup.* Huss Edler Preserve Co., Chicago, Ill. Products consisted in whole or in part of tomatoes containing yeasts, spores, bacteria, mold filaments, decayed tissue in excessive amounts, and bacterial debris. Product destroyed. New Jersey.

No. 1873. *Misbranding of Syrup.* Pacific Coast Syrup Co., Seattle, Wash. Label "Full Measure Tea Garden Drips—74% Sugar Cane Syrup—26% Corn Syrup Sugar." Units actually a mixture of sugar cane syrup and glucose, and did not contain 26% of corn syrup, but 30%. Product released on payment of costs and bond. Idaho.

No. 1874. *Misbranding of Cheese.* Fer-bend & Co., Chicago, Ill. Deficiency in weight. Shortage of 60 pounds in 77 boxes, or average deficiency of 3.6 percent. Released on payment of costs and bond. Alabama S. D.

No. 1875. *Misbranding of Cheese.* P. J. Schaefer Co., Marshfield, Wis. Deficiency of 32 pounds, or average of 3.7 percent for 40 boxes. Alabama S. D.

No. 1876. *Adulteration and Misbranding of Orange Flavor.* H. C. Schrank Co., Milwaukee, Wis. Label "Soda Water Flavor Orange True Fruit." Product a dilute orange flavor and not a genuine orange flavor as label indicated. Plea of guilty. Fine \$50. Wisconsin E. D.

No. 1877. *Adulteration and Misbranding of so-called Peach Cordial and Cherry Cordial.* John O'Donoghue, Washington, D. C. Product consisted of sugar solutions containing a small amount of alcohol, artificially colored and flavored with artificial peach flavor and artificial cherry flavor. Decree consented to. Released. Columbia.

No. 1878. *Adulteration of Tomato Paste.* Sachem's Head Canning Co., Guilford, Conn. Analysis: Yeasts and spores, 80 per one-sixtieth milligram; bacteria, 800,000,000 per gram; mold filaments in 95 percent of the fields. Plea of guilty. Fine \$50. Connecticut.

No. 1879. *Misbranding of Evaporated Milk.* Cache Valley Condensed Milk Co. (Inc.), Logan, Utah. Label "Contents not less than 26 percent T. S., 7.5 percent B. F." Product contained considerably less than these proportions of total solids and butter fat. California S. D.

No. 1880. *Adulteration and Misbranding of so-called Apple Cider.* Arbita Spring Water Co., New Orleans, La. Product a compound of apple product, commercial glucose or impure starch sugar, sodium benzoate, and saccharin. No claimant appeared. Product destroyed. Texas U. D.

No. 1881. *Alleged Adulteration and Misbranding of Alexandria Senna.* J. L. Hopkins & Co., New York, N. Y. Analysis: Ash, 19.20 percent; ash acid insoluble, 9.15 percent. Verdict, not guilty. New York S. D.

No. 1882. *Adulteration and Misbranding of Damiana Elixr.* Mihabowitch Co., Cincinnati, Ohio. Analysis: Alcohol by volume, 29.03 percent; total solids, 10.37 percent;

sugars, 9.45 percent; non-sugar solids, 0.92 percent; very little or no damiana. Undefended. Fine \$25 and costs.

No. 1883. *Adulteration of Olives*. Alco G. Psiaki Co., Brooklyn, N. Y. Examination showed: (Lot No. 1). Appearance fair; passable, 26, 32.0 percent; wormy, 6, 7.4 percent; worm-eaten, 26, 32.0 percent; decayed, 23, 28.3 percent; total 81, 99.7 percent. (Lot No. 2). Appearance poor; passable, 13, 15.4 percent; wormy, 3, 3.5 percent; worm-eaten, 36, 42.8 percent; decayed, 32, 38 percent; total 84, 99.7 percent. Plea of guilty. Fine, \$20. New York E. D.

No. 1884. *Misbranding and Alleged Adulteration of Vinegar*. Place Bros., Oswego,

N. Y. Label "Cider Vinegar." Product a dilute solution of acetic acid or distilled vinegar and a product high in reducing sugars and foreign mineral matter which had been prepared in imitation of cider vinegar. Misbranding found. Release on payment of costs and bond. Massachusetts.

No. 1885. Facts as in No. 1884.

No. 1886. *Misbranding of Cottonseed Meal*. Stockyards Cotton & Linseed Meal Co., Kansas City, Mo. Product invoiced as "C/S Feed Meal," a product which contains not less than 41 percent of protein. Each sack contained but 21.27 percent protein. Allegation admitted. Release on payment of costs and giving bond. Missouri W. D.

IT'S THE HAMMER THAT COUNTS.

What is advertising, anyhow? If you are marketing a new soap, can you place an advertisement in the magazines tomorrow which will sell your soap for the next ten years? Not with a single advertisement. Not if you paid a million for it and William Shakespeare wrote that advertisement. It can't be done. You would sell some soap tomorrow and the next day, and you might be selling a little soap ten years from now, all on the strength of that one advertisement. But your sales would be steadily falling off all the time, instead of steadily increasing, which latter condition is the one you want to bring about.

An office man loses his health through working sixteen hours a day, and worrying the other eight. He is assured that, by going to a gymnasium, he can win back his health. He is all enthusiasm and wants to work sixteen hours a day in the gymnasium, and get back his health right away. But he soon learns that it cannot be done in that way; that he can only work a few minutes each day in the gymnasium, and that to get results he must keep this up with the utmost regularity day after day. He finds that regularity is what counts, and that he must hammer at it, day after day.

So it is with advertising. It's the hammer, hammer, hammer that counts. We believe we are safe in saying that an advertising campaign should be always spread out. If you have ten dollars to spend, the point is that you will get better results by spending a dollar a week for ten weeks than by spending the entire ten dollars for one advertisement. You have to hammer at it. Shakespeare couldn't write an advertisement, a single insertion of which will continue to build business for ten years. On the other hand, a bright office boy can write an advertisement which will build business if you print it once a week for ten years. It's the hammer, hammer, hammer that counts.—H. S. Adkins in *National Druggist*.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Sciò, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.



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THE WOMEN'S SECTION.

There seems to be considerable discussion among the Branches concerning the Women's Section and its status in the A. Ph. A.

The women constituting the general board of the Section are actively at work in the preparation of the Constitution and By-Laws, and in outlining a program for the annual meeting, and are confident that the initial meeting will reveal the need for such work as will make the Section a real value.

The members at large, however, seem to be engirdling their brains for a name for this addition to the A. Ph. A. family, forgetting that it was officially christened the "Women's Section" at the Denver meeting, and the women were so keenly appreciative of being at once fully received into the home circle that they will now steadfastly resist any attempt at this late date to reduce them to a mere auxiliary, an adjunct or something outside the intimate pale of the parent organization.

It has been suggested that because a majority of the members of the Section would not be eligible to membership in the Association proper, they should be allowed to affiliate as a "section." In refutation we call attention to the fact that in the House of Delegates, which really wields a power in shaping the Association's actions, there are many who are not members of the Association. Therefore any attempt to dislodge the women from their present position, in which they neither seek nor expect any dictatorial powers or voting privileges in the A. Ph. A. proper, would be discriminating against them.

The position of the women pharmacists who are eligible to and do now hold membership in the A. Ph. A., is a dual one. They are members of the A. Ph. A. and of the Women's Section also.

It has been stated that in some sections of the country there is considerable opposition to the employment of women pharmacists. If this be true, the Section has a good field to work on from the start. These women must be supported in their professional ambitions and the non-professional women of the Section will see their duty in bringing the men of their families to a realization that women are naturally endowed with the qualifications necessary to the successful

practice of pharmacy and will be an additional asset to any business employing them.

This opposition does not exist in the A. Ph. A. It has never ignored the women pharmacists. It may not have specifically invited the women in the profession to become members, but this is due rather to methods of soliciting membership than to any studied attempt to discourage women pharmacists. Its doors stand wide open to receive all the women pharmacists in the country into its organization on the same footing as its men members.

The surest and quickest way to overcome such opposition is for the women themselves to seek membership in the A. Ph. A., placing themselves on the same professional level as the men who are employers. What the A. Ph. A. as a whole recognizes as good timber cannot be intelligently opposed by its individual members.

Another work of the Section should be that of inducing all present organizations of women pharmacists to become affiliated with the A. Ph. A. and merge their local meetings with the local Branches. Pharmacy should not be divided against itself, and with the way pointed out the professional women will be quick to recognize the superior strength of the parent organization and that to maintain a separate organization is simply a duplication of effort.

Thus far the needs of the professional women are clear, and it will require all the aid the non-professional ones can give them to secure relief. When this shall have been accomplished, the Association will benefit by the closer organization of the men and women in pharmacy and by an increased membership.

The needs of the non-professional members are not quite so clear, and it is expected that when the Section once gets into convention there will be more ideas and suggestions from the fertile brains of these women than the Section can take care of in the year's work. There are, however, many phases of the drug business in which the non-professional women are deeply interested, in fact all those problems in the trade which bear so closely on the home life, and it is in solving these that the professional women—with their clear understanding of store conditions—will be able to return the assistance given them by their sisters.

The work of the section then will fall into

two grand divisions; the professional and non-professional, but a moment's thought will reveal so many points of common interest, so many places where mutual help will bring mutual results, that the dividing line between the two will be obliterated and these women will be united in a sisterhood which is bound to mean much for the good of pharmacy.

Finally, the Women's Section does not want to be an auxiliary, or subsidiary organization, but it does want to be an intimate working part of the A. Ph. A. It hopes to build its organization so substantially and to become so true a helpmeet that it will be the one indispensable "Section" of the A. Ph. A.

ADELAID M. GODDING, President.

ANNA G. BAGLEY, Secretary.

The Bulletin Board

RESPECTING THE A. PH. A. OFFICIAL HOME.

BROOKLYN, N. Y.

Replying to your circular letter in reference to permanent official headquarters, I fully agree that the American Pharmaceutical Association should have a home for a complete and up-to-date library as well as for a laboratory where proposed formulas may be tested.

I sincerely hope that American Pharmacy will be able and willing to meet the expenses of erecting and equipping the structure in question.

Very respectfully yours,

(MRS.) CLARA A. DIEKMAN.

PHILADELPHIA.

Answering your circular letter, will state that it seems to me desirable for the American Pharmaceutical Association to have a permanent home. And I am impressed with the thought that no more appropriate place could be found for such a home than the city of Philadelphia, the home of William Procter, the Father of Pharmacy.

The Philadelphia College of Pharmacy has for some time past hoped to secure a site upon the Parkway (leading from the City Hall to Fairmount Park). If their an-

ticipations in this matter are realized, I have no doubt but what adjacent property could be secured suitable for your purpose. The Parkway will possibly be one of the handsomest thoroughfares in America, and the location of your home adjacent to the oldest college of pharmacy in the United States, would, in my opinion, be most fitting. I hope that you and the other active members of the Association will use their best efforts to locate their home building in Philadelphia.

Truly yours,

HOWARD B. FRENCH.

INDIANAPOLIS.

The proposed home for the American Pharmaceutical Association which is to contain a well-equipped laboratory and fireproof apartments for preservation of the archives of the Association, appeals to me as an effort in the right direction.

The work of the A. Ph. A. is of much importance to the pharmaceutical profession in this country, and an adequate workshop should add materially to its efficiency.

When you are ready to solicit subscriptions, send me a blank. Very truly,

J. G. MUELLER.

RICHMOND, VA.

I am in receipt of your circular letter addressed to dear fellow member, and I have read the circular letter with much pleasure and if the American Pharmaceutical Association can see its way clear to have permanent official headquarters where experimental laboratories could be maintained for the working out of National Formulary and U. S. P. problems, it would be a great advantage, and I sincerely hope the officers of the Association will be able to see their way clear to have such a building for their permanent headquarters.

With kind regards, I remain,

Yours respectfully,

E. D. TAYLOR.

LAWRENCE, KAN.

In response to your recent circular letter, kindly record mine as an affirmative vote for a permanent "Official Home" for the A. Ph. A. The desirability of such a home can hardly be questioned. It must be evident to everyone acquainted with the work of the committee of revision that a permanent laboratory, thoroughly equipped for working out problems of the U. S. P. and National Form-

ulary, is an absolute necessity. These books cannot go for another decade without revision. Yearly supplements should be issued. But that can be done only by having a permanent workshop for those who carry on the work. The need for continuous revision of the U. S. P. and National Formulary is apparent when we consider for a moment the rapidly changing and developing sciences which form the foundations for these books. It is a safe statement, I think, that the Pharmacopoeia has not made as much progress in the past twenty-five years as it should make in the next five. This lack of progress is owing largely to the conditions under which the Committee on Revision carries on its work.

The other objects enumerated in the circular are all worthy, and as a matter of course would be a part of such an undertaking. But to my mind the most valuable feature of the undertaking would be to furnish permanent laboratories for continuous work on the National Formulary and U. S. P.

With best wishes for the success of the enterprise, I remain,

Very truly yours,

CHAS. M. STERLING.

NEW YORK.

I am heartily in favor of the idea of erecting an Association home that will be a perpetual monument to American Pharmacists and American Pharmacy. The thought is a grand one, and should meet with the earnest cooperation, and untiring support of every thoughtful pharmacist throughout the land. An institution of this kind has long been found a necessity, but the courage to foster it has been lacking. Now that it has been created in the minds of our people, let it take shape and become a realization in fact.

With best wishes for success, I am,

Yours truly,

F. E. NIECE.

BOSTON.

Your circular in regard to "Need of an Association Home" is received, and in reply will say that there are only three points, as I see it, to be considered in regard to such a proposition.

The *first* point is—is such a home needed? To this question I personally will answer yes.

The *second*—can we afford to build such a home? This question, I think, can be very

properly answered by those who have a thorough knowledge of the finances of our Association at the present time, and the possibilities for the future.

The *third*—the location of the home. It seems to me desirable that such a home should be not over 250 miles distant from Washington. My reason for this statement is that I believe our permanent Secretary should be, at all times, in touch with various legislative matters which are bound to affect us in the future and which, in my opinion, will multiply rather than diminish in the years to come.

With my kindest regards, I remain,

Yours very truly,

JAMES F. FINNERAN.

DOW CITY, IOWA.

Your letter at hand and I am very much in favor of having a home for the A. Ph. A. established, and I don't see any reason why we can not have same with the large membership which we have. Hoping to see this matter brought up at Nashville if not before, I remain,

Respectfully,

I. A. ANDERSON.

MIDDLETOWN, N. Y.

I fully realize that the creation of an Association Home, for the A. Ph. A., is a work which will require very careful planning, and quite a readjustment of the affairs of our Association. I also realize the advantages which will follow such a step, and I have full confidence in the ability of the American Pharmaceutical Association to build wisely and properly for the future, as it has always done in the past.

I therefore give my vote in favor of the proposed project. Yours very truly,

WILLIAM H. ROGERS.

LA FAYETTE, IND.

In reply to your recent circular letter, asking for an expression of opinion as to the desirability of a permanent home for the American Pharmaceutical Association, am pleased to say that I am very much in favor of establishing such a home for the use of the Association.

I hope, that at the next annual meeting a plan will be submitted and adopted, which will enable all members and others as well to contribute towards, and assist in, making the Association Home a reality.

Yours very truly,

JOHN J. SCHULTZ.

HOLDREGE, NEB.

I am glad to note the agitating of an official home for the American Pharmaceutical Association, fully equipped for the working out of all problems connected with the work of the Association and the protection of all of its records, papers, books, etc., in fire-proof vaults. Keep up the good work; it is bound to come. Yours, etc.,

D. J. FINK.

FRUITVALE, CAL.

We need badly such a home and laboratory to keep alive pharmacy for the retailer and to help him in his many problems that he can not well turn over to the wholesaler and to the manufacturer.

I think with this and with the many able pharmacists, assisted by the colleges and their newly-graduated enthusiasts could do much to show the medical profession that all the new work does not come from the manufacturing pharmaceutical houses.

I do not for a minute wish to depreciate the good work that they are doing, but I think sometimes they are prone to make the M. D. believe that they are alone in the uplift and betterment of pharmaceutical progress. If we have such a laboratory that we all can send our work and ideas to and get answers that will help us and also show us our mistakes it will be a great help.

While I believe in the commercial training and feel it is of utmost importance today, still I feel that the ethical need not be as dead as others think it should be.

Yours cordially,

W. BRUCE PHILIP.

ST. LOUIS, MO.

This is the first opportunity I have had since receiving your communication to make my reply to your request.

I certainly approve heartily of your views on the Association home and trust that your plans are not visionary ones only, but that the whole Association in the not far distant day will take up the idea and put it successfully through.

The need of a fireproof building to protect the Association's property, of an irreplaceable character and of great interest to the Association's future being and work must be very apparent to any thinking member.

The installation of laboratories for investigations and research work in the inter-

est of pharmacopoeial and National Formulary work and trying out the character of proposed preparations would be a decided step in the right direction and no doubt would result in giving us better formulas and better preparations.

FRANCIS HEMM.

GRAND RAPIDS, OHIO.

I consider it a most excellent movement on the part of the A. Ph. A. to establish an Association home and would suggest that it be built in Ohio and at the Ohio State University, provided the trustees of said university cooperate with the American Pharmaceutical Association and furnish the location for the building on the university grounds.

Special chemical and pharmaceutical work could be carried on by members of the Association and with this location they would have the advantage of having access to both the university and state libraries.

Very truly yours,

AZOR THURSTON.

TESCOLA, ILL.

Your circular letter in reference to the Association home is received. I am heartily in favor of the project, indeed, the pharmacists of the United States owe it to the efforts of those who have given their time to provide such a home.

I would like for the American Pharmaceutical Association to own a home similar to that owned by the Chemists' Society in New York, provided it can be properly maintained.

The American Pharmaceutical Association is a scientific body of ample importance and influence to be entitled to a "home" in keeping with its scientific attainments, and, if possibly secured, would be a well merited monument to the earnest work of those who have so generously made the Association what it is.

Other societies have their homes, why not ours? Others of much less importance have their library, etc., and I think it is time ours make efforts to provide for these things.

Very truly yours,

M. F. STACY.

CHICAGO, ILL.

Answering your circular letter would state that the writer is very much in sympathy with the movement towards the establishment of an Association home. In fact he does not even think that the members should

be called upon, but the Federal authorities should establish same and practically maintain it. The cause of Pharmacy should be given the same attention, if not more, than a good many other cults, if I may use the expression, that are now being favored.

Hope the movement will have such an active impetus as to be carried through at an early date. Should be glad to work with that object in view, and remain,

Very truly yours,

PETER VAN SCHWACK & SONS.

C. P. VAN SCHWACK.

ANN ARBOR, MICH.

I read your article, "The Need of an Association Home," with great interest. It expresses ideas about a permanent headquarters with properly equipped laboratories for experiments and research for A. Ph. A., that I have entertained for many years and occasionally expressed, but passed them by as fond hopes not to be realized in the near future.

Your editorial is timely. The A. Ph. A. has arrived in its activities and usefulness at a point where it has become almost peremptory for a departure as you outlined, if it is to grow and develop to still greater effectiveness and importance as a leader and promoter of Pharmacy as a profession. The creation of a permanent home as you suggest would bring the importance of the Association, as a factor, for the welfare of the nation, to the attention of many who are not aware of its existence. Of prime importance would be the assurance that it would give the A. Ph. A. as a permanent institution, to carry out the objects of the Association with more prestige. Provided with well-equipped laboratories it would in a short time make the home the center of Scientific Pharmaceutical research and experiment in this country and an inexhaustible source of practical and useful information for its members and investigators. This proposition ought to attract every Pharmacist, and many Doctors of Medicine, to such an extent that they become members of the A. Ph. A. to help along a great undertaking. I hold myself ready to donate for a fund as a starter and hope that your suggestion may meet with unreserved approval in and out of the ranks.

Wishing speedy development, I am,

Very truly yours,

OTTMAR FRERICH.

MISSOURI PHARMACEUTICAL ASSOCIATION.

The Missouri Pharmaceutical Association will celebrate its thirty-fifth anniversary at Pertle Springs, June 10-13. This will be the thirteenth meeting at that charming summer resort in the suburbs of Warrensburg.

The reading and discussion of papers, particularly of a practical nature, will be the leading feature of the convention. Professor Leo Suppan, Century Bldg., St. Louis, is Chairman in charge.

President H. O. A. Huegel, St. Louis, is working for an unusually large attendance. He has appointed William Mittelbach, Boonville, Sam Farrar, Lebanon, and J. E. Koppenbrink, Higginsville, as members of the Advisory Committee of the National Drug-gists' Home, Palmyra, Wis.

Treasurer William Mittelbach reports over 100 applications for membership on hand.

F. W. Robinson, Warrensburg, is local Secretary to whom application should be made for information about local arrangements.

The Travelers' Association will have charge of the entertainment. William F. Kahre, 11 South 4th St., St. Louis, is Chairman of the committee.

The round trip over the Missouri Pacific Railway from St. Louis is \$8.95. The prevailing rate throughout the state is about two cents per mile. Inquiry should be made of local agents.

St. Louis and Kansas City will use special cars for the trip.

The Missouri Board of Pharmacy will hold a meeting for the examination of candidates for registration, Monday, June 9. Those desiring to take the examination should notify Secretary Charles E. Zinn, 300 West 9th St., Kansas City, a week in advance of the meeting.

A special rate of \$2.00 per day has been made by the Hotel Minnewawa.

President Huegel extends a hearty invitation to pharmacists in neighboring states to be present at the meeting. For further information regarding the Association, address Permanent Secretary Henry M. Whelpley, 2342 Albion Place, St. Louis.

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WASHINGTON STATE PHARMACEUTICAL ASSOCIATION.

The Washington State Pharmaceutical Association will hold its annual meeting at

Scenic Hot Springs, Washington, June 23, 24 and 25. Special rates at the hotel and on the railroad will prevail.

Scenic Hot Springs is justly celebrated for the natural beauty of its surroundings, and is an ideal place for a summer outing.

Though a comparatively young member in the family of States, Washington is already noted for its able pharmacists, and for its active State Association. Its members apparently realize the importance of securing appropriate pharmaceutical legislation before outside interests gain such a foothold as to make it difficult to do so.

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PENNSYLVANIA PHARMACEUTICAL ASSOCIATION.

Forest Park Hotel, Forest Park, Pa.,
June 24-25-26, 1913.

The thirty-sixth annual meeting will be held at Forest Park, Pike County, Pa., June 24, 25 and 26, 1913, and every member should do what he can to make this a better meeting than any the Association has ever held. To attain this object will require more aggressive work than many of our members have ever done, but it can be accomplished if everyone will help a little, and, that, too, in the face of the fact that the Association has been noted the country over for its valuable practical meetings, and for the number of excellent papers presented each year for discussion.

In order that the meeting may produce something that will prove of value to every member present, as well as to every member who reads the Proceedings, your Committee of Papers and Queries solicits original papers on all phases of pharmaceutical knowledge and practice—Scientific, Educational, Legislative, Commercial, Historical, and particularly on Practical Pharmacy and Dispensing.

Merely as suggestions for those who have no definite subject in mind, upon which they wish to write, we are submitting a list of subjects and propositions which have been submitted by various members to whom we sent appeals for help in compiling the list. Surely every member should be able to find something in this list upon which he can write at least a note, if not a long paper. The value of a paper does not depend upon its length, and it often happens that our shortest papers stir up vastly more valuable discussions than

the more lengthy papers. A dozen or more short notes on such subjects as Numbers 1, 4, 17, 18, 20, 43, 45, 16, 18, 49, 52, and others, would make the sessions in which they are read of exceeding interest and value. The pharmaceutical circles of the country are watching our Association because of the work it has done in the past, and we must not disappoint them by "falling down" on our work. We need not "fall down" if those who have contributed papers in other years will do so again this year, and if those who have never sent a paper will send in one or more this year.

LIST OF QUERIES.

1. The advantages accruing from taking a yearly inventory, and best methods for taking an inventory of a retail drug store.
2. Sterilization by the pharmacist—U. S. P. and N. F. requirements.
3. A satisfactory formula and perfume for liquid soaps for toilet use.
4. Time-savers in bookkeeping.
5. To what extent is the tinfoil used for wrapping food stuffs and confectionery contaminated with Arsenic?
6. What is the best process for making Elixir of the Phosphates of Iron, Quinine and Strychnine?
7. What new expedient can be devised to prevent poisoning through the mistaking of Corrosive Sublimate tablets for ordinary tablets used in medicine, numerous cases of such nature being reported from time to time?
8. What are the advantages and disadvantages of replacing the Syrup in the official Syrup of Hydriodic Acid with Glycerin, either wholly or in part?
9. What are the advantages of drug store experience while attending college lectures?
10. Should a preceptor aid a student in acquiring practical knowledge of the drug business, or should the student be allowed to depend upon himself for "picking up points?"
11. Oregon Balsam: A paper on this subject is wanted.
12. The Lead Number Test for Asafetida.
13. The detection of Cane Sugar in Honey.
14. Assay of Fluidextract of Cinchona.
15. Difficulties in the assay of alkaloidal extracts.
16. The Ignition Test for Magnesium Carbonate.
17. Original formulas and suggestions for N. F. and U. S. P. preparations are wanted.
18. What difficult or unusual prescriptions have you recently encountered, and how did you succeed in compounding them?
19. Give detailed formulas and methods for exploiting any "own-make" preparations which have proven successful for you.
20. What factors are to be taken into consideration in arriving at the exact cost of the prescription?
21. Collection, preservation, chemistry and action of the venom of the Rattle Snake (*Crotalus horridus*).
22. The Sale of Oxygen by the pharmacist—the most satisfactory mode of handling.
23. How can the trade in household remedies, flavoring extracts, toilet preparations, etc., now lost to the retail pharmacist by reason of the forming of soap-buying clubs, be partly regained?
24. How can the colleges of pharmacy, the State Pharmaceutical Examining Board and the pharmaceutical associations of the State of Pennsylvania successfully cooperate to better the status of pharmacy in this State?
25. Why should, or should not, the proposed A. Ph. A. Home be located in the State of Pennsylvania? Why should, or should not, the Home be located in Philadelphia?
26. The new man in a new neighborhood—what losing policies should be avoided, and what gainful policies should be adopted in his efforts to draw trade to his store?
27. The importance of keeping close "tabs" on market conditions.
28. The folly of cutting prices on a staple article simply because, by quantity or combination buying, one is able to secure a lower price than his competitors.
29. Is Extemporaneous Pharmacy on the wane? If so, what is the cause?
30. To what extent is Fusel Oil used for Heavy Oil of Wine?
31. What is the quality of the Pancreatin on the market?
32. To what cause may we trace the enormous increase of prescription writing during the past decade?
33. How should a first-year high school pupil demonstrate that he has absorbed 15 Regent counts' worth of knowledge?
34. A demonstration is wanted to show why many graduates in pharmacy, some having had as much as three terms of instruction, are unable to distinguish between Buchu and Uva Ursi, between Podophyllum and Belladonna Root, between Cinnamon Water and Infusion of Digitalis.
35. How can the pharmacist meet the standardization requirements of the U. S. P.?
36. Define what is meant by "Profession of Pharmacy."
37. Is there not a pressing need in our colleges of pharmacy for a larger amount of Practical Work, so that a graduate who has made a good record in his examinations, may be able to make a good smooth ointment, a creditable emulsion, a thoroughly mixed and evenly divided lot of capsules, a decent batch of suppositories,—in general, to show greater competency to combine drugs and handle apparatus than he usually does?
38. Should not our colleges of pharmacy insist that their graduates be better prepared as business men, so that at least the ordinary operations of charging, crediting, posting, and making out a bill may be understood?
39. Is there any need for the long hours maintained in the drug business? Does it not make many druggists one-sided and nar-

row-minded? Is it not driving out and keeping out of the business young men of superior ability? Cannot the hours be at least much shortened? Is there justification any longer for keeping open all day Sunday when hundreds of druggists are now closing at least half of the day?

40. What explanation can be given for the deterioration in the quality of drug clerks of late years, aside from their knowledge of pharmacy?

41. Does the certificate of a Q. A. really amount to anything as showing its holder's ability, or is it only a mere makeshift, backed by interested parties, to get around the law?

42. Is the small attendance at most pharmaceutical meetings due to lack of interest or to lack of time? Would not shorter store hours make far better attendance at such meetings?

43. Does paying side-lines for the average drug store.

44. Preliminary education which a prospective pharmacist should have.

45. Advantages and disadvantages of buying in large quantities.

46. Advantages and disadvantages of giving window space for telephone booths.

47. The value of the luncheonette as an adjunct to soda business.

48. Five months of parcel post and how it has affected my business.

49. If you have made a pronounced success of some department of your business, will you not tell your brother pharmacists how you "turned the trick?"

50. Newspaper advertising for the retail pharmacist—profitable and unprofitable.

51. Some of the "skin games" that have been tried on me.

52. Is it good policy to push proprietary brands of U. S. P. and N. F. preparations?

53. Should not druggists use greater care in displaying confectionery for sale?

54. Peroxides and perborates in toilet preparations—their use, value and legal status.

55. Who are our competitors?

56. Should the minimum pharmacy course extend over three years?

57. What degrees should be conferred on the completion of 2, 3, and 4 year courses in a College of Pharmacy?

Certain funds belonging to the Association have been invested, and of the proceeds \$20 in gold are awarded each year as a prize for the most meritorious paper, pharmaceutical apparatus or original device presented at the annual meeting.

Even though you may not find it possible to attend the meeting, send in a paper and it will be published in the Proceedings, with the result that someone will profit by your kindness, you will have contributed toward keeping the Association where it has stood for years—at the head of the list for the number and value of its original papers.

Kindly notify the Chairman as promptly as possible what is to be the subject of your paper or papers, and then send the paper or papers to him in time to have them properly classified and assigned to a place on the program.

FREEMAN P. STROUP,
Chairman Committee on Papers and Queries.
145 N. Tenth St., Philadelphia, Pa.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



CINCINNATI BRANCH.

The meeting of April 8th was opened by President J. U. Lloyd, who was greeted by the members, their families and friends, among whom were a number of students of the Cincinnati College of Pharmacy.

After a brief business meeting, President Lloyd introduced the speaker of the evening, Dr. A. O. Zwick, who, in a masterly manner, presented his lecture on "The Oldest Pharmacopoeia in the World." This lecture was profusely illustrated by means of stereopticon views and has been delivered by Dr. Zwick in a number of cities in America.

The lecturer takes you back in a delightfully fascinating way to about 7000 years B. C., showing pictorially and proving that the ancient Egyptians and other peoples had even in that time quite advanced ideas regarding the practice of medicine and the administration and employment of drugs and various medicaments. He shows how the gradual deciphering of the hieroglyphics found upon stone and papyrus prove the Egyptians to have been adepts in the art of healing.

Dr. Zwick also called attention to the more modern developments in medicine by showing

the pictures of such noted scientists as Jenner, Pasteur, Koch, Ehrlich and quite a number of others, and their contributions to science.

At the conclusion of the lecture, Dr. Zwick was warmly thanked by President Lloyd on behalf of the Branch, and he feelingly referred particularly to the last picture presented, a likeness of Dr. Zwick's father, recalling him as a warm personal friend and as an able pioneer pharmacist.

The next meeting of the Branch will be held May 13, 1913, at which time a lecture on "Serum Therapy" will be presented.

CHAS. A. APMEYER, Secretary.

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CITY OF WASHINGTON BRANCH.

The April meeting of the City of Washington Branch of the American Pharmaceutical Association was called to order, Wednesday, April 16, 1913, at 8:15 p. m., by Dr. Lyman F. Kebler, President, at the National College of Pharmacy, Washington, D. C.

Routine business was immediately dispensed with, and Dr. Kebler, with very fitting remarks, introduced Dr. F. V. Coville of the Bureau of Plant Industry, Department of Agriculture, whose subject was entitled, "The Influence of Soil upon Plant Culture."

Dr. Coville explained that while the particular line of work he was now doing was in fruit culture—adapting the blueberry or huckleberry to cultivation, experiments were being made at the same time along the same lines with regard to several drug plants, notably *Gaultheria procumbens*. He explained his first observations with these plants in New Hampshire, and how when he came to experiment with them he was surprised to learn that the alkaline soil, which is so essential to most plant culture, produced puny huckleberry plants, and absolutely no success in their culture could be obtained with such soil. Further observations showed that these plants thrived both in sandy uplands and in bogs, but in nearly all cases, in a soil composed of decayed laurel and oak leaves. This led to experiments with such soil as was found near the plants, leading to the discovery that it was strongly acid. It was found, however, that soil composed of such leaves of six or seven years' decay had become alka-

line and plants either died or remained neutral therein. Further experiment showed that oak and laurel leaves are very acid when they first fall, almost as much so as the lemon juice, but after four or five years the acidity ceases and an alkalinity is produced, due to the large percentum of calcium present in their composition (2 to 3 percent calculated as CaO).

Extensive experiments are now being carried on with a soil mixture of nine parts upland peat, one part sand, and one part broken porous pots. Remarkable results are being obtained, plants eighteen months old producing berries 11/16 of an inch in diameter. It is believed that this size can be increased to 3/4 inch, and that with the remarkable production which experiments indicate will be attained, much of the barren pine lands of New Jersey and other places can be successfully used in the production of this berry.

Dr. Coville went into great detail in explaining the characteristics of certain fungi associated with this plant, which are found on all healthy specimens, but which do not seem to alter or change the composition of the plant in any way.

The adaptability of this acid soil to the culture of many plants now generally considered hard to raise, has been clearly shown, and this knowledge, it is believed, so Dr. Coville stated, will lead to more successful cultivation of numerous drug plants.

A discussion of the peculiar phases of this industry, in which Mr. Bradbury, Mr. Grant, Dr. Leet, and others took part, followed.

Dr. Kebler then introduced Dr. Leet, assistant to Dr. J. T. Anderson in the Hygienic Laboratory, Public Health Service, who took Dr. Anderson's place in presenting to the branch the subject, "Controlling the Manufacture of Sera, Vaccines, and Antitoxins." Dr. Anderson sent his regrets at being unable to attend, but on account of his work in connection with the tests being made of Dr. Friedman's "turtle virus," he had to be out of the city. Dr. Leet proved a most capable substitute and a most excellent spokesman, handling his subject in a most interesting manner.

He first pointed out the provisions of the law, the Act of July 1, 1902, by virtue of which these products came under the control of the Public Health Service. He then described the methods of use, i. e., by subcutaneous, cutaneous and intravenous injection,

then the character of each product, i. e., toxins, antitoxins, viruses, vaccines, and sera; also the corruption of the name, vaccine, which should be applied only to smallpox vaccine. The improvement in vaccine points he remarked had been wonderful since the passage of the law controlling their manufacture. Before its passage, sore arms were the majority, now, a very small minority. The production of a standard product having become compulsory to manufacturers, more constant results are now being obtained. The absence of tetanus spores in vaccine points had promptly resulted, but before the time of the law they were found present in a large percentage of points that were examined. The abolition of dry points has also reduced the contamination remarkably, glycerin proving a fairly good preservative, but too much dependence must not be placed in the glycerin as an antiseptic.

He pointed out how toxin (diphtheric) had passed through the round of 500 rabbits, the symptoms in the last following administration from a portion of the brain of the 499th had been identically the same as those of the first, second, third, and all between them.

The Units of the Hygienic Laboratory were carefully described and the manner of their restoration in cases of destruction outlined. The manner of inspecting laboratories was also detailed. Dr. Leet stated that each laboratory was subjected to an annual inspection without forewarning, that samples of its products must be submitted every two months, and that inspectors bought (in addition to these latter) other samples from the open market.

He described the preservation of each product, showing conclusively that material loss within the time limit can be prevented by keeping each product properly chilled. The use of phenol and tricresol as preservatives was explained, and the reason for the limit of phenol to $\frac{1}{4}$ percent and of tricresol to $\frac{1}{2}$ percent he attributed to the kidney effects of larger percentages.

Tetanus and diphtheric antitoxin work is required by law to be done in separate laboratories under the existing law, Dr. Leet stated, and it is now compulsory to slaughter all animals used in this work.

In answer to questions, Dr. Leet defined a virus as the term is now generally accepted, as a culture of bacteria too small to be seen by a microscope, and admitted that none of

the samples of these products which had been examined had been found wholly free from contamination, further, that experiment showed that such contamination increased, usually, with poor preservative methods.

Further discussion by Messrs. Polkin, Grant, Bradbury, Albrecht, Flemer, Hilton and Richardson, and Drs. Kalusowski, Chestnut, Emory, Kebler, and Motter, brought out further information as to the standards of these products as compared with those of chemicals and drugs, and a discussion of the merits of the Phylacogens, now so much advertised followed.

The thanks of the Branch, it was moved, seconded and carried, should be extended to Dr. Coville and Dr. Leet for their most excellent contributions, and such motion was directed to be made a part of the record.

Upon motion of Dr. Hilton, seconded by half a dozen members, the sincere and deep sympathy of the Branch was extended to Mr. M. J. Wilbert, in his long illness, with the hope that a speedy recovery would be his good fortune. Mr. Hilton was then appointed a committee to send flowers to him, and then the meeting was adjourned.

Plans are being made to hold the May meeting at the Drug Gardens, Arlington Experimental Farm, (Department of Agriculture), Alexandria County, Virginia, on May 24, 1913, at 2 p. m. The cordial invitation of the Branch is extended to all who wish to attend.

HENRY B. FLOYD,
Secretary.

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NEW YORK BRANCH.

A regular meeting of the New York Branch of the American Pharmaceutical Association was held April 14, beginning at 8:30 o'clock in the evening.

President C. O. Bigelow presided.

The minutes of the March meeting were read and approved.

The report of Treasurer Joseph Weinstein was received as read.

For the committee on membership, Louis Berger presented applications from five persons, as the result of a letter sent to each member of the Branch.

Reports for the committee on education and legislation were made by John Roemer and Prof. W. C. Anderson. Mr. Roemer told of the progress of the several pharmaceutical measures in the State legislature. Prof.

Anderson reported that the Owen bill for a federal health bureau had been reintroduced in Congress, mentioned several other congressional measures of interest to pharmacists, and related in detail the consideration recently given to the formulation of a national anti-narcotic law. A new State law providing regulations for the collection of samples was read by the Secretary. Legislative matters were discussed by Messrs. Diekman, Hatcher, and Raubenheimer.

Mr. Bigelow stated that the chairman of the committee on fraternal relations, Peter Diamond, had reported that he was unable to put forth any effort toward a meeting with the county medical society. It was the general opinion that it was too late in the season to attempt a joint meeting, and it was decided to let the matter rest for the present.

For the committee on the progress of pharmacy, Dr. G. C. Diekman gave brief abstracts of the following contributions to recent European literature: "The Detection of Fixed Oils in Balsam of Peru," "The Adulteration of Oil of Camphor," "The Detection of Oil of Camphor in Oil of Turpentine," "The Value of Protargol Substitutes," "Differentiation between Maltol and Salicylic Acid," "Use of Oil of Eucalyptus in Scarlet Fever and Measles," "Stability of Tincture of Iodine," and "Wall Paper and Linoleum Responsible for Arsenical Poisoning." Dr. Diekman also made some reference to the plan for the Eleventh International Congress of Pharmacy and recounted some recent legal decisions of interest to pharmacy.

Prof. H. V. Army called attention to the unsatisfactory manner in which the Association's report on the progress of pharmacy is received by the members since the discontinuance of the annual proceedings and the succeeding Year-Book, with the publication of report in installments in the journal of the Association. This matter was discussed by Messrs. Diekman, Murray, Raubenheimer, Coblenz, and Roemer. It was the consensus of the speakers that the existing method of issuing the report on the progress of pharmacy was far from satisfactory; that the chemical abstracts of the American Chemical Society in no way took the place of the former report; and that some way of getting the report in its one-time convenient shape was desirable. The following preamble and

resolution, offered by Prof. Army, was unanimously approved:

The members of the New York Branch of the American Pharmaceutical Association hear with much regret that the council of the American Pharmaceutical Association has rescinded the motion passed at the Richmond meeting of 1910, directing the publication of the Report on the Progress of Pharmacy as a separate bound volume and that the plan now proposed is to publish the report piecemeal in the issues of the Journal of the American Pharmaceutical Association. The members of the New York Branch consider such treatment of the report a serious error and have therefore passed the following resolution which is submitted to the council through the general secretary:

Resolved, That the New York Branch of the American Pharmaceutical Association request the council of the American Pharmaceutical Association to reconsider its vote, directing the publication of the Report on the Progress of Pharmacy in monthly installments in the Journal and that the council be further requested to publish the report in a separate bound volume as agreed upon at the Richmond meeting.

The paper of the evening was "Observations on the Keeping Properties of Digitalis and Some of Its Preparations," by Robert A. Hatcher, M. D., and Cary Eggleston, M. D. This paper, which was read by Doctor Eggleston, was interesting, instructive, and to a great extent iconoclastic. Opening with a review of the voluminous literature on the subject of the deterioration of digitalis, with particular reference to the conclusion of Focke, Hale, and several earlier investigators, the authors soon set about to prove from their own careful physiological experimentation that digitalis and its preparations are much more stable than is generally believed. Their experiments included many market brands of the leaf and fluid-extract, tincture, infusion, acetic acid fluid-extract, and some of the much-advertised "fancy" preparations. Specimens of leaf and fluidextract almost and quite thirty years old were examined among many and found to have deteriorated at the low rate of about $1\frac{1}{2}$ percent a year. This rate of deterioration was found to be about normal for digitalis and its hydro-alcoholic preparations, even though the restrictions of Focke regarding moisture were not heeded. It was the conclusion of the authors that much of the failure with preparations of digitalis, particularly the infusion, was due to incomplete extraction of the drug. He has ad-

vised the use of a finely-powdered leaf for extraction purposes. The weight of their experience supported the tincture as the most reliable preparation. They had found that the acetic acid preparations were unsatisfactory and very unstable.

In summing up in reply to various questions that followed the reading of the paper, Dr. Hatcher and Dr. Eggleston expressed the following views:

Most long-accepted ideas regarding digitalis are foolishness, and the acceptance of this folly has resulted in a neglect of the study of this drug.

The belief in the rapid deterioration of the drug under normal conditions is nonsense, and no physician can tell even approximately the age of a specimen. Their thirty-year-old fluidextract was better than the average fresh one.

There is, according to Hale, no difference in potency of the leaves of the first or second year's growth. The German leaves are a little better than the English, and the wild Bohemian leaf is the most potent.

The frog test method is not a criterion of the therapeutic value of digitalis.

*Digituratum was described as "an extract of digitalis minus a myth," reference being made to the opinion that the digitonin was the nauseating body in digitalis.

The tincture and the infusion, if made from the finely-powdered leaf, represents more than ninety-nine percent of the total activity of the drug.

There is no real reason for preferring the infusion, the action of the two preparations is identical and the tincture is more stable.

It was necessary to neutralize the acid in testing the acetic acid fluidextract, because the acid killed the cats used as the test.

Digalen is not what it is advertised to be, but probably an aqueous solution of digitalein, and is prone to deterioration.

Excessively large doses of the fat extracted from digitalis would not produce vomiting in the cat so that the nauseating effect of digitalis is not due to the fat; it is a characteristic of the drug and unless nausea be present the full effect of the drug is not obtained.

The discussion of the paper was an indication of its value and of the interest had by members of the branch in the important subject with which it was concerned. The branch expressed its appreciation of the work

of Drs. Hatcher and Eggleston in a rising vote.

Adjournment was taken at 11:05 o'clock.

HUGH CRAIG, Secretary.

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CHICAGO BRANCH.

The Chicago Branch of the American Pharmaceutical Association devoted its April meeting, which was held at the University of Illinois School of Pharmacy on Tuesday evening, April 15, to an exhibit of lantern slides. Through the kindness of Mr. E. G. Fine of Boulder, Colorado, the slides exhibited by Mr. Fine at the Denver meeting were loaned to the Branch and were shown at this meeting. Professor Clark discussed these slides briefly and then showed a number of colored slides prepared from his photographs taken in the vicinity of Buffalo and Elk creeks, Colorado. These were followed by some slides from Nashville, which were loaned by Local-Secretary J. O. Burge. The meeting was well attended and the program a pleasant one.

E. N. GATHERCOAL, Secretary.

Council Business

COUNCIL LETTER No. 12.

PHILADELPHIA, April 1, 1913.

To the Members of the Council:

Motions No. 20 (Petition to form Cincinnati Branch A. Ph. A.) and No. 21 (Election of Members; Applications Nos. 98 to 117, inclusive), have each received a majority of affirmative votes.

The Committee on Memorial to Oscar Oldberg report as follows:

"IN MEMORY OF OSCAR OLDBERG.

We, the Council of the American Pharmaceutical Association, would bear testimony to the irreparable loss suffered by American Pharmacy in the death of Oscar Oldberg. For nearly fifty years he rendered distinguished service as an author of text-books, as an editor of pharmaceutical journals, as a teacher of pharmaceutical students, as a member of the Revision Committee of the United States Pharmacopœia, and as an earnest worker in, and one-time President of, the American Pharmaceutical Association. It is our sincere conviction that Professor Oldberg was one of the ablest thinkers, and one of the greatest leaders of permanent reform

and advancement, which the history of American Pharmacy has so far developed. He had the prophet's insight. He was able to pierce the future. He saw what pharmacy needed in its further unfolding and development. For considerably more than a quarter of a century his was a voice crying out from the wilderness, urging numerous educational, registrational and legislative reforms with singular logic, power and patience. His ideas gained currency by the sheer weight of their own significance. His opinions came to be accepted by many who were ignorant of their origin. The reforms he advocated are every year coming into a fuller realization, and the future development of pharmacy will in no small measure be conditioned upon the quiet, unobtrusive, but all-pervasive and constructive work of Oscar Oldberg.

We deeply deplore his death. We feel it to be a great blow to the American Pharmaceutical Association. We feel it to be an even greater blow to American Pharmacy as a whole. To the members of the bereaved family our hearts go out in deepest sympathy, and we vote and direct that a copy of this memorial shall be sent to each of them, and as well to the pharmaceutical press of the country.

WM. B. DAY, Chairman,
HARRY B. MASON,
CHARLES W. PATTERSON,

Committee on Memorial to Oscar Oldberg."

Motion No. 22 (Appropriation of \$25 for National Drug Trade Conference). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$25 be appropriated for the use of the National Drug Trade Conference.

The above motion is approved by the Chairman of the Finance Committee.

Motion No. 23 (Election of Members). You are requested to vote on the following applications for membership:

No. 118. T. M. Macbeth, Apartment 9, Marchel Court, Memphis, Tenn., rec. by H. M. Faser and A. W. Clark.

No. 119. William E. Frye, 23 Vine St., Brooklyn, N. Y., rec. by H. M. Whelpley and G. N. Dissoway.

No. 120. Arthur Floyd Schlichting, 520 Hill St., Ann Arbor, Mich., rec. by W. S. Hubbard and A. B. Stevens.

No. 121. J. Otto Kohl, McMicken and Mohawk Place, Cincinnati, Ohio, rec. by C. F. P. Fennel and Theo. D. Wetterstroem.

No. 122. John Kernkamp Mehrrens, 525 11th Ave., San Francisco, Cal., rec. by Fred I. Lackenbach and J. H. Beal.

No. 123. Adolph G. Rosengarten, 9th and Parrish Sts., Philadelphia, Pa., rec. by J. H. Beal and J. W. England.

No. 124. Frederiek Rosengarten, 9th and Parrish Sts., Philadelphia, Pa., rec. by J. H. Beal and J. W. England.

No. 125. J. Fred Windolph, Hayes St., Norwich, N. Y., rec. by J. H. Beal and J. W. England.

No. 126. Lloyd P. Griesemer, 135 N. 16th St., Philadelphia, Pa., rec. by Charles H. LaWall and E. Fullerton Cook.

No. 127. Leroy Forman, 1320 N. 59th St., Philadelphia, Pa., rec. by Charles H. LaWall and E. Fullerton Cook.

No. 128. Charles H. Irwin, U. S. Public Health Service, Fort Stanton, New Mexico, rec. by F. A. Southard and George F. Payne.

No. 129. Wendell J. Gift, Converse, Indiana, rec. by A. H. Dewey and C. B. Jordan.

No. 130. L. E. Highley, Hot Springs, S. D., rec. by H. M. Whelpley and Theo. F. Meyer.

No. 131. John C. Otis, Clarion and Montgomery Sts., Cincinnati, Ohio, rec. by C. F. P. Fennel and J. H. Beal.

No. 132. Joseph A. Velsor, 9 Gold St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 133. J. G. Rosengarten, Jr., 9th and Parrish Sts., Philadelphia, Pa., rec. by J. H. Beal and J. W. England.

No. 134. Harry E. Pye, Sergeant, Hospital Corps, U. S. Army, Fort Mills, P. I., rec. by Edgar T. Hitch and Nels Rasmussen.

No. 135. William Q. Fancher, Sergeant, Hospital Corps, U. S. Army, Fort Frank, Corregidor, P. I., rec. by Edgar T. Hitch and Nels Rasmussen.

No. 136. Harold Both, Sergeant Hospital Corps, U. S. Army, Fort Mills, P. I., rec. by Edgar T. Hitch and Nels Rasmussen.

No. 137. Edward Williams, 4401 Harrison St., Chicago, Ill., rec. by Mrs. M. M. Gray and E. N. Gathercoal.

No. 138. Richard V. Mattison, M. D., Ambler, Pa., rec. by J. H. Beal and J. W. England.

No. 139. Mr. H. W. Prentis, care Armstrong Cork Co., Pittsburgh, Pa., rec. by J. H. Beal and J. W. England.

No. 140. John Weik, Edward and Madison Rd., Cincinnati, Ohio, rec. by Charles Ehlers and Edw. Voss, Jr.

No. 141. William Lakamp, 2623 Montgomery Ave., Cincinnati, Ohio, rec. by Fred S. Kottle and Edw. Voss, Jr.

No. 142. Harold W. Jones, care The Wm. S. Merrell Chem. Co., 5th and Pike Sts., Cincinnati, Ohio, rec. by Charles G. Merrell and Theo. D. Wetterstroem.

No. 143. Edwin Heinemann, 1572 Elm St., Cincinnati, Ohio, rec. by F. S. Kotte and Theo. D. Wetterstroem.

No. 144. Leonard A. Lange, 486 Market St., Milwaukee, Wis., rec. by J. H. Beal and J. W. England.

No. 145. C. V. Boetcher, Corner Spring and Front Sts., Columbus, Ohio, rec. by J. H. Beal and J. W. England.

No. 146. Peter E. Hermann, 1114 Second

Ave., Cincinnati, Ohio, rec. by George B. Kauffman and J. H. Beal.

No. 117. Frank A. Ruf, 1624 Pine St., St. Louis, Mo., rec. by J. H. Beal and J. W. England.

No. 148. Albert Whitman Claflin, 70 South Main St., Providence, R. I., rec. by J. H. Beal and J. W. England.

No. 149. William Horlick, care Horlick's Malted Milk Co., Racine, Wis., rec. by James W. Morrison and J. H. Beal.

No. 150. William Horlick, Jr., care Horlick's Malted Milk Co., Racine, Wis., rec. by James W. Morrison and J. H. Beal.

No. 151. Bryan Brewster Gilmer, 3402 Garrott St., Houston, Texas, rec. by J. H. Beal and J. W. England.

No. 152. Bert W. Strickland, 1500 Broadway, Denver, Colo., rec. by F. W. Nitardy and C. L. Bush.

No. 153. William Tracy Hover, 510 Franklin St., Denver, Colo., rec. by F. W. Nitardy and C. L. Bush.

No. 154. James A. Ferguson, 134 Thompson St., Philadelphia, Pa., rec. by R. H. Lachey and J. W. England.

J. W. ENGLAND,
Secretary of Council.

415 N. 33d St.

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Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.

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CARL FREDERICK JACOB BRUCKER.

Carl Frederick Jacob Brucker, senior resident member of the firm of Fritzsche Bros., New York, died, after a prolonged illness, on March 23, 1913, in his home at Passaic, N. J. Funeral services were held there Wednesday morning; the interment was private and took place the same day.

He was born in Frankfort-on-Main, November 24, 1858, came to the United States in 1884, and returned to Germany the following year. In 1892 he returned to the United

States, when he became a member of the firm and so continued until his demise.

Mr. Brucker was prominently identified with the essential oil industry for nearly thirty-four years, as associate with Schimmel & Co. (Fritzsche Bros.), Miltitz, near Leipzig, Germany and Fritzsche Brothers, New York. He became a member of the American Pharmaceutical Association in 1902. He was a member of the Chamber of Commerce, the New York Board of Trade and Transportation and various scientific and commercial and social clubs. He was a man of commanding appearance, retiring disposition, and liberal to charities. He had a charming personality and was held in the highest regard by all who knew him. J. W. E.

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OSCAR OLDBERG.

American pharmacy mourns the loss of one of its ablest leaders. Oscar Oldberg, eminent teacher, profound thinker and brilliant writer, has passed away, leaving a gap in his profession that it will scarcely be possible to fill. Dr. Oldberg's reputation needs no testimony from his contemporaries. His fame is secure. Generations yet to come will accord him a most prominent place among the great pharmacists and teachers of his time. Eager to advance the status of pharmacy as a profession and far-sighted to an unusual degree, he early gave warning of difficulties with which pharmacists are now contending and he constantly urged the necessity of cultivating the professional spirit as opposed to the commercialism which has now become so apparent.

Professor Oldberg fought courageously for the principles which he believed to be right and his unquestioned ability and indomitable purpose placed him in the forefront of the battle and subjected him to the stress and strain under which his physical powers, never robust, finally gave way.

In the councils of the American Pharmaceutical Association, Professor Oldberg will long be missed. The interests of this Association were dear to him and his best services were always at its command. Many of the members of the A. Ph. A. will experience in his passing a sense of personal loss.

W. B. DAY, President.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

EBLE, CHAS. F.,
From Manila, P. I.
To Camp Keithley, Mindanao, P. I.

Fonteyne, GUSTAVE J.,
From Manila, P. I.
To "Siasi," P. I.

HARRIS, SAMUEL J.,
From Guimaras, P. I.
To F. H. & A. C. No. 2, Presidio,
San Francisco, Calif.

HUGHES, J. R.,
From Houghton, S. Dak.
To care Eagle Book Drug Store,
Idaho Falls, Idaho.

JONGEJAN, CORNELIUS J.,
From 331 Granville Ave.,
To 753 Grandville Ave., Grand Rapids,
Michigan.

KANTOR, MORRIS,
From 522 W. 152d St.
To care Kantor & Kantor, 184th St., Cor.
Audubon Ave., New York, N. Y.

LOWE, DAVID,
From Winthrop, Mass.
To residence unknown.

NOREEN, MATT,
From San Francisco, Calif.,
To residence unknown.

RASMUSSEN, NELSON,
From Grande Island, P. I.
To Ft. Mills, Corregidor, P. I.

SCHULTZ, J. J.,
From 528 Main St., Lafayette, Ind.
To 1109 Tippecanoe St., Lafayette, Ind.

WATSON, ELISHA,
From Rule, Texas.
To Newcastle, Texas (Young Co.).
(Was given last month as Newcastle, Pa.)

WATSON, G. N.,
From 808 Alabama St.
To 1001 Maine St., Lawrence, Kansas.

WILCOX, RUSSELL C.,
From Gary, Ind.
To residence unknown.

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B. P. WEIGHTS AND MEASURES.

The British Pharmacopœia authorities have a reputation for sanity in the matter of weights and measures. The reputation is now in peril. We reported a fortnight ago that the Imperial system is threatened so far as the text of the work is concerned, and we have since learned that the metric system is not beyond the designs of the tinkers, inasmuch as representations have been made to the Pharmacopœia Committee (not the Committee of Reference in Pharmacy) that the description "Cubic centimeter" should be replaced by the term "mil." It is difficult to conceive that the suggestion should be taken seriously, or that any comment is necessary, nevertheless it appears to be desirable to point out the objections to the employment of the term "mil" in pharmacy and medicine—it is not used by professional chemists. These objections fall under two heads:

1. The danger.

2. The confusion which will result from the employment of a word which already has several meanings.

As to the danger, abbreviations for "mil" would probably be employed by medical men in writing prescriptions, and the likeliest contraction would be "m" because it is the shortest. This contraction is in established use as the sign for minim, an Imperial measure of volume adopted in all the editions of the British Pharmacopœia. If, therefore, the contraction were used in prescriptions as a representation of "mil," a patient would obtain one-fifteenth of the medicament required. This would be serious in most cases. American pharmacists of the first rank object to the term, e. g.:

"The Committee of Revision of the National Formulary have decided that the term "mil" is an undesirable substitute for the abbreviation cc. in the new edition of that work."—C. & D., August 26, 1911, p. 353.

"Mil" can very easily be mistaken for the well-known milligramme. — Raubenheimer, *National Druggist*, August, 1911.

As to the second objection—viz., that it would lead to confusion—we give a few instances of the use of the word and of words with the same pronunciation:

A. As unit of length:

"1 mil= 10^{-3} in."—Kay and Laby's "Physical and Chemical Constants," 1911.

"A circular mil is a unit of area for measuring cross-sections of wires, tubes and rods, being the area of a circle whose diameter is 1 mil."—Murray's "Historical Oxford Dictionary."

"The Imperial Standard Wire Gauge, which has been sanctioned by the Board of Trade, is one that was formulated by J. Latimer Clark. Incidentally, one of its recommendations is that it differs from pre-existing gauges scarcely more than they differ among themselves, and it is based on a rational system (basis being 1 mil). No. 7/0, the largest size, is 0.50 in. (500 mils) in diameter, and the smallest, No. 50, is 0.001 in. (1 mil) in diameter."—"Encyclopedia Britannica," vol. xxviii, p. 739.

B. As unit of currency:

"Mil," a money of account in the United States, being one thousandth of a dollar (one-tenth of a cent).—"Standard Dictionary." (Possibly employed in Canada also.)

"The two principal schemes of decimaliza-

tion are the pound and mil schemes and the penny and ten-franc scheme."—Jevons' "Money," xiv, 176.

"It is proposed that the smallest coin, one thousand to the pound, shall be called the mil."—Humphrey's "Coinage of the British Empire," p. 149.

Hong Kong coins include the bronze "mil."

C. As measure of length:

"Mil" is a Danish mile (4,680 mile).

"Mil" in Turkey is 1,000 archins.

D. Other uses:

"Mil" is "a thousandth part of anything."
—"Standard Dictionary."

"Per mil"=per thousand.—Murray's "Dictionary."

"Mill" or "mille" in card games is a counter representing ten "fishes" or "points."

"Mil," synonym for millet seed, which may possibly have been employed as small weights. It is also given in old works as synonym for "miliun solis."

"Mil," a town in Holland.

As far as British pharmacy is concerned the term "mil" has signally failed to catch on, and it is to be hoped that the Pharmacopœia Committee will not be deluded into believing the contrary on account of the use of the term in a book to which the Pharmaceutical Society of Great Britain has given its authority.—*Chemist and Druggist*.

CLEVERNESS IN ADVERTISING.

An advertisement may be clever. If you are able to word it in a pointed, pithy way, this will certainly not detract from its selling power. On the contrary, it will add to the value of the advertisement. Again we must not confound mere "smartness" with cleverness. Nobody likes a "flip" salesman, therefore the probabilities are that nobody likes a flip advertisement. To be really clever, you must be kind as well. Cleverness and humor may go hand in hand. But remember that while an advertisement may be both humorous and clever, it need not necessarily be either to be a success.—*W. S. Adkins*.

The Journal of the American Pharmaceutical Association

Volume II

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Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE HUGHES-BACON BILLS.

THE bill to Promote the Efficiency of the Hospital Corps of the United States Army has been reintroduced in the 63rd congress by Representative Hughes and Senator Bacon, the only changes in the text being the retention of the title Hospital Corps, instead of the title Medical Corps proposed by the original bill, the limiting of the number of sergeants major to 30, and of sergeants first-class to 300, and the dropping of the grade of privates first class.

The text of the present bill reads as follows:

"That the Hospital Corps of the United States Army shall constitute the enlisted personnel of the Hospital Corps now authorized by law and shall consist of thirty sergeants major, at \$75 per month; three hundred sergeants, first class, at \$65 per month; sergeants, at \$36 per month; corporals, at \$24 per month; cooks, at \$30 per month; privates, first class, at \$21 per month, and privates at \$16 per month, with such increase for length of service and other allowances as are or may hereafter be established by law."

Though brief in its terms, the bill is believed by those who have studied the subject to provide the means necessary to bring about the changes in status and pay that have been so long desired, and that seem to be absolutely necessary to bring the personnel of the Hospital Corps to a grade of efficiency commensurate with the grade of service which its members are expected to render.

The manner in which the surgeon-general of the army views the proposed reform is expressed in his annual report for 1912, in which he says:

"This office last year in a memorandum to the Chief of Staff dated July 27, 1911, referring to the report of the Chief of Staff to the Secretary of War.

pointed out that the pay of the Hospital Corps in the pay bill of 1908 was not increased proportionately to that of other enlisted men, so that an injustice was done the Hospital Corps which has made it difficult to obtain a good class of men and retain the services of non-commissioned officers. When the Hospital Corps was organized in 1887, it was recognized that its members would be required to do work that was not attractive to enlisted men and which would require special qualifications. To secure suitable men to perform these unattractive duties, non-commissioned officers of the Hospital Corps were given pay considerably in excess of most non-commissioned officers of the line and at a later date the pay of the privates was likewise proportionately increased. This principle was lost sight of in the legislation of 1898 and its recognition in future legislation is considered necessary to secure the efficiency of the service.

"The following grades and rates of pay are recommended: Sergeants major (new grade) thirty at \$75 per month, with the increased pay for service as now authorized for sergeants first class. Sergeants' pay to be increased from \$30 to \$36 per month. Corporals, \$24 per month (no increase). Privates, first class, pay to be increased from \$18 to \$21 per month. Privates, \$16 per month (no increase)."

That the claims of the members of the Hospital Corps are not unreasonable, but eminently just, is apparent from the fact that the farrier who cares for sick mules under the direction of the veterinary surgeon receives a higher wage than the private first class of the Hospital Corps who cares for the soldiers and officers when in hospital. Evidently, on the score of attention when ill, the mule has several points the better of the officer or private.

While the Sergeants of the Hospital Corps actually receive less pay than the non-commissioned officers of the same grade in any other branch of the service, they are also deprived of the opportunity of qualifying for the so-called special ratings in gunnery, marksmanship, etc., through which the sergeants in all other branches may obtain added pay ranging from \$2 to \$9 per month.

Owing to these and other inequalities of pay and opportunity, the Hospital Corps is now recruited mainly from men who realize their inability to make good in other branches of the service where the pay and opportunities for advancement are so much greater. It is a matter of official record that the morale and quality of the Hospital Corps are progressively declining quantities.

Then consider the qualifications which are *expected* from the Sergeant of the Hospital Corps:

"To obtain the position of sergeant in the Hospital Corps, the soldier is required to qualify in a written examination, in pharmacy, materia medica, care of sick, elementary hygiene, arithmetic, minor surgery and hygiene, and is, in addition, examined orally in army regulations, nursing, practical pharmacy, clerical work, drill, minor surgery, including extraction of teeth."

As a matter of fact, the sergeants first class are practically the house surgeons, pharmacists and chief nurses combined, of the military hospitals.

The term "expected" was used above advisedly, for the reason that under existing conditions it is absolutely necessary to accept the result of almost any kind of an examination as satisfactory in order to fill vacancies.

Some years ago the American Pharmaceutical Association took up the cause of the pharmacists in the Navy and U. S. Public Health Service, and in spite of repeated discouragements continued its propaganda in their behalf until a

fair degree of success has been obtained. Naval pharmacists who formerly ranked next to the negro cook, now receive commissions, with the rank and pay of ensign, which is about the equivalent of a second lieutenant on land, while under the revised regulations recently adopted for the Public Health Service, the pharmacists of that service have had their conditions materially improved by an increase of pay to \$1600, \$1400, and \$1200, for pharmacists of the first, second, and third classes, respectively, with a commutation amounting to \$25 per month.

The accomplishment of these reforms so long desired and striven for makes it still more necessary that the claims of the army pharmacists be recognized, and as many of the members of this Association as possible should at once write their senators and representatives in congress, requesting them to favor the Hughes and Bacon bills to improve the efficiency of the Hospital Corps. Do not let this matter go by default.

For the encouragement of those who may never have written their senators or representatives, it may be said that the latter are, as a rule, only too glad to hear from their constituents concerning the merits or demerits of proposed legislation, and consider themselves favored by being so advised.

J. H. BEAL.



THE FEDERAL NET WEIGHT LAW

DURING the closing days of the 62d Congress, the so-called Gould Net Weight Bill was enacted and became a law by the signature of President Taft.

The bill amended Section 8 of the Federal Food and Drugs Act, which relates to misbranding, by striking out the words:

"Third. If in package form, and the contents are stated in terms of weight or measure, they are not plainly and correctly stated on the outside of the package," and inserting in lieu thereof the following:

"Third. If in package form, the quantity of the contents be not plainly and conspicuously marked on the outside of the package in terms of weight, measure, or numerical count: provided, however, that reasonable variations shall be permitted, and tolerances and also exemptions as to small packages shall be established by rules and regulations made in accordance with the provisions of Section 3 of this Act."

Section 2 of the Gould law reads as follows:

"Section 2. That this act shall take effect and be in force from and after its passage: provided, however, that no penalty of fine or imprisonment, or confiscation shall be enforced for any violation of its provisions as to domestic products prepared or foreign products imported prior to eighteen months after its passage."

The object of the delay in enforcing the penalties of the act is, of course, to enable manufacturers and dealers to dispose of packages already in stock, and to afford them a reasonable time for necessary changes in containers and labels.

The question has been raised as to whether the amendment affects both foods

and drugs, or only the former, but since it is that portion of Section 3 of the act that is specifically stated to apply to the misbranding of foods that is amended, the inference would be that it does not apply to drugs.

It should be borne in mind, however, that, according to circumstances, certain articles may be considered either as foods or drugs, and that by food inspection decision No. 85, it has been declared by the Board of Food and Drug Inspection that the decision as to whether a given product be a food or a drug shall depend not only upon what claims are made for it, but also upon the uses to which it is put. By food inspection decision No. 48, it is also declared that products which are commonly added to foods in their preparation are properly classed as foods, which latter ruling would naturally apply to condimental, flavoring and analogous substances.

Probably these obscurities will be cleared up when the Secretaries of Agriculture, the Treasury and of Commerce shall have announced the rules and regulations for the administration of the new portion of the law.

J. H. BEAL.



THE COMPARATIVE DOSES OF HEROIN AND MORPHINE.

IN the May issue of the *Practical Druggist*, Editor Otto Raubenheimer discusses the comparative doses of Heroin and Morphine, and calls attention to the fact that benzoyl-acet-aconitine and heroin are remarkable exceptions to the general rule that the acetylation of an organic compound usually produces a less toxic product, and that diacetyl-morphine was given the name "heroin" on account of its heroic properties.

He also calls attention to the fact that heroin has come to be regarded as even more powerful than was at first supposed, and that there has been a continual disposition on the part of pharmacologists to reduce its average and maximum doses; and that authorities giving the average dose of morphine as 8 to 15 milligrams (1-8 to 1-4 gr.), give the average dose of heroin as from 1-6 to 1-3 this amount. For this reason he criticises the so-called Drug Trade Conference Bill, because it makes certain exemptions in regard to preparations which contain "one-fourth of a grain of morphine or one-third of a grain of heroin," etc., on the ground that in proportion to the amount of morphine permitted, the heroin should be very much less than 1-3 of a grain.

Editor Raubenheimer is undoubtedly correct in the statement that one-third of a grain of heroin, so far as dosage is concerned, is out of all proportion to one-fourth of a grain of morphine. It should be remembered, however, that the Conference Bill does not aim to establish any definite ratio of dosage, and that the exemption simply relieves those who dispense preparations which do not contain more than 2 gr. of opium, 1-4 of a gr. of morphine, 1-3 of a gr. of heroin, or 1 gr. of codeine in a fluid or avoirdupois ounce from the necessity of registering as dealers and the payment of the Federal tax. These exemptions apply only when such remedies or preparations are sold, distributed or dispensed as medicines, and not for the purpose of evading the provisions of the act, i. e., the avoidance of registration and payment of the government tax. If sold or

dispensed for any other than strictly medicinal purposes, the exemption would not apply.

It should be remembered also that the Conference Bill does not aim to control the distribution of narcotics to consumers, since this is a function that rests exclusively with the states, and the general government cannot have any control or supervision over the traffic farther than is necessary to collect the Federal tax.

Notwithstanding these facts, the writer is inclined to side with Editor Raubenhheimer, in the view that the proportion of heroin in the exempted preparations should be reduced in amount.

J. H. BEAL.



CLASS OBLIGATION AND RESPONSIBILITY.

CONCERNING the punishment of the "dope seller" in particular and the responsibility of pharmacists in general for the moral and civil delinquencies of their fellows, the editor of the *New Idea* discourses in this fashion:

"Here in the moral city of Detroit a couple of shadow men from the Pinkerton force recently entered a drug store disguised as longshoremen. They sought a place to buy cocaine and they got it. Inside of fifteen minutes, a proprietor and clerk were safely behind bolted bars. The strong hand of the law moves slowly but steadily. There must be a reaction to this cocaine and morphine traffic and it's beginning to act.

"The new standard of drug store ethics eliminates traffic in habit-forming drugs. The druggist who stoops to this underhand business must eventually meet the minion of the law. The authorities intend making an object lesson of one 'dope seller' in each community and thus put an end to this illegal traffic for all time. * * * If the drug trade is to raise its standard, it must first discard the lower element of pharmacists. If right shall survive—wrong must perish. Do your part to eliminate undesirable druggists who are undermining the foundation wall of the profession."

Herein our attention is called to the existence of an important social fact, namely, that every man must, to a certain extent, suffer for the sins of the class to which he belongs, and conversely, that every class must suffer for the shortcomings of its individual members.

If two or three percent of the men engaged in a particular calling are convicted of wrongdoing, all are liable to be suspected to be guilty of similar offenses, or in other words, the evil acts of the two or three percent of evil doers in any given vocation are more potent in determining the standing of the vocation in public esteem than the ninety-seven or ninety-eight percent who pursue an upright and blameless business or professional career.

Out of these facts grow the responsibility of a class for its members, and the obligation of members to their class, and just in proportion as these reciprocal relations are held in esteem or disregarded, so the class flourishes or retrogrades.

Possibly in no other calling are these qualities of greater importance than in pharmacy, and possibly in no other calling have they been more persistently neglected.

One dishonest or incapable pharmacist can poison the minds of a whole com-

munity against pharmacists as a class. One detected substitutor, or one who prostitutes his calling by the reckless selling of alcoholic liquors or narcotic drugs, leaves in the public mind the suspicion that there are many others of the same kind.

Consequently, when a pharmacist has been detected in some violation of the law or in some gross offense against ethics we cannot afford to wrap ourselves in the cloak of our own self-righteousness and leave the matter to the public prosecutor. We should be the first to invoke the law and to see to his punishment, and unless we do this, we have no right to complain if we are regarded as particeps criminis.

Pharmacists should be as jealous of their professional good name as the government is of its coinage, and should pursue those who debase it just as relentlessly and as fearlessly.

Class credit is as important as personal credit, and far-sighted business prudence will protect both.

J. H. BEAL.



SUGGESTED PROGRAM FOR THE SIXTY-FIRST ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Nashville, Tenn., August 18-23, 1913.

MONDAY, AUGUST 18.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *National Association of Boards of Pharmacy.*
- 3:00 p. m. *First General Session of the Association.*
- 7:30 p. m. *First Session of the House of Delegates.*
- 9:30 p. m. *President's Reception.*

TUESDAY, AUGUST 19.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *Second General Session of the Association.*
- 2:30 p. m. *Women's Section.*
- Section on Scientific Papers.*
- Section on Commercial Interests.*
- National Association Boards of Pharmacy. (2d session.)*
- 7:30 p. m. *Second Session of the House of Delegates.*
- Section on Pharmacopocias and Formularies.*

WEDNESDAY, AUGUST 20.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *Section on Education and Legislation.*
- 12:30 p. m. *Reunions of College Alumni.*
- 2:30 p. m. *Section on Practical Pharmacy and Dispensing.*
- Conference of Pharmaceutical Faculties.*
- 6:30 p. m. *Reunions of College Alumni.*
- 8:00 p. m. *Section on Education and Legislation. (2d session.)*
- Section on Commercial Interests. (2d session.)*
- Women's Section. (2d session.)*

THURSDAY, AUGUST 21.

- 9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Joint Session of the Section on Education and Legislation,
Conference of Pharmaceutical Faculties, and National Association
of Boards of Pharmacy.*
2:30 p. m. *Women's Section. (3d session.)
Section on Scientific Papers. (2d session.)
Section on Practical Pharmacy and Dispensing. (2d session.)*
4:30 p. m. *Trolley Ride over the City of Nashville.*
8:00 p. m. *Garden Party and Park Concert.*

FRIDAY, AUGUST 22.

- 9:00 a. m. *Meeting of the Council. (Organization Meeting.)*
10:30 a. m. *Section on Historical Pharmacy.
Conference of Pharmaceutical Faculties.*
2:30 p. m. *Excursion to the Hermitage.*
8:00 p. m. *Section on Historical Pharmacy. (2d session.)
Third Session of the House of Delegates.
Section on Pharmacopœias and Formularies. (2d session.)*

SATURDAY, AUGUST 23.

- 9:00 a. m. *Meeting of the Council.*
10:30 a. m. *Final General Session of the Association.*

In constructing the above Provisional Program, it has been sought to provide at least two sessions for each Section. If more time is necessary to dispose of the business of a Section, it will be left to the wisdom of that Section to select a time for a third session that will occasion as little interference as possible with other sessions.

One of the functions of the House of Delegates is to relieve the General Sessions, as far as possible, from the consideration of matters that are not in shape for immediate action; as a consequence, the General Sessions should require less time than heretofore.

The hours assigned to the Women's Section are those which, at previous meetings, have commonly been devoted to shopping expeditions and similar diversions, so that these sessions can hardly be considered as adding to the extent of the usual program.

In criticising the suggested program, it should be borne in mind that there must of necessity be more or less interference, and that it would not be possible to arrange the various sessions consecutively without devoting a period of at least ten days to the work of the Convention.

Suggestions for the amendment of the program should be sent at as early a date as possible to the Secretary of the Council, Mr. J. W. England, 415 N. 33d St., Philadelphia, Pa.

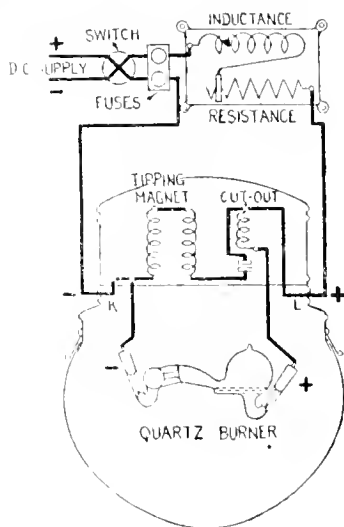
Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

A MERCURY VAPOR LAMP FOR BLEACHING.

L. N. SAHM, NEW YORK CITY, AND WM. MITTELBACH, BOONVILLE, MO.

The following cut shows the construction of a mercury lamp made by the Hewitt Electric Co., of Hoboken, N. J., that is used for bleaching oils and other articles in the Heller & Merz laboratories of New York City:



As indicated, the mercury is placed in the large end of the glass apparatus, and quartz crystals in the small end, the whole being exhausted of air. A current of electricity is then passed into the lamp, converting the mercury into vapor, which coming in contact with the quartz produces ultra-violet rays having powerful bleaching properties. In order to handle these most powerful rays, the lamp is suspended under a bell reflector, open at the bottom. Over all a square wooden box is placed having a removable platform or tray so arranged that the object to be bleached is readily removed while the light is completely hidden to the operator. This is necessary for these rays are destructive to the human eye and will quickly destroy it, if exposed directly to the light.

By actual experiment it has been shown that articles can be bleached under this lamp in much shorter time than under the most favorable conditions of the sun's rays.

Some of the fixed oils as poppy, corn, almond, etc., are quickly deprived of coloring matter, an object desired in their use for some purposes. Other pro-

ducts used in pharmacy can also be treated with this bleaching process, and the lamp be used with practicable results in other directions.

The lamp was invented in Germany four or five years ago, and is being used in that country to a great extent. Its utility is beyond the experimental stage, and ought to be of interest to those working with bleaching processes.

REPORT OF COMMITTEE ON DRUG MARKET, AUGUST, 1912.

Your committee was notified of their appointment so recently that other engagements have prevented some of the members from working and our report lacks their usual valuable contributions. Two conditions attract our attention. First, the statements of Messrs. Roemer, Dickman, Sayre and others that many physicians are dispensing inferior drugs which they purchase at lower than honest market prices. Second, the reports of various state boards that retail pharmacists are either culpably or carelessly guilty of dispensing own make goods of very inferior quality. Simple solutions which should be readily made of standard quality are far below standard. One board finds about 17 percent defective. Another 73 percent, and another 56 percent. Camphorated Oil ranged from 38 percent to 85 percent of official strength. Spirit of Lemon from 1.2 percent to 49 percent of official standard. Spirit of Peppermint from 4 percent to 73 percent, thirty-five convictions being secured. Another authority calls attention to the great variation in the strength of ordinary tinctures as dispensed. Tinct. Belladonna ranged from 1.05 percent to 3.76 percent extractive, a fair average being 1.2 percent to 1.6 percent. Tinct. Digitalis ranged from 1.08 percent to 3.45 percent extractive, a fair average being 3.8 percent to 4.5 percent. Tinct. Gentian Comp. ranged from 1.08 percent to 5.01 percent, a fair average limit being 5 percent to 6 percent. Tinct. Hyoscyamus ranged from 1.04 percent to 4.27 percent, a fair average limit being 1.45 percent to 1.75 percent. The average limits of extractive on Tinct. Bellad. and Tinct. Hyoscyamus are based on standard strength in alkaloid. Under present conditions a physician can dispense what he will, but no manufacturer can supply him goods defective in quality or untrue to title, and an active campaign along this line should soon correct the evil.

To guard against the condition in the retail stores the State Associations should caution the proprietors against permitting the manufacture of the simplest products by any one who does not realize the importance of absolute accuracy. In addition, it may be advisable to suggest that the tinctures be examined to assure their being within reasonable limits of strength. The personal element causes trouble in this line as in others. Powd. Sulphate of Iron assaying but 67.5 percent has been shipped by a painstaking, reliable house in error for the U. S. P. Dried Sulphate. Inattention by the proof reader has permitted labels to say what the proprietor did not intend, so that constant vigilance is important to maintain a proper standard in all departments.

Essential Oils. Many of these oils are systematically adulterated and in a manner which is difficult for the ordinary analyst to detect. The simple determination of physical constants is no longer sufficient to detect adulterants, as products are offered for the express purpose of defeating the ordinary tests. Organic compounds are offered as substances that will "enrich" an oil, that is, raise the alcohol or ester content of an adulterated product. Certain oils are also "standardized," that is, cut down to a definite percentage composition if found to run high in content of the active ingredient. In some instances these practices are more or less openly conducted under the idea that this is a "scientific" method of handling variable products, but the aim of these dealers—obtaining high prices for an inferior product, belies their words. In connection with this report we call attention to the paper by the Chairman of the Committee on the Ash Standard and to the contribution by Dr. Kebler received too late to embody with this report.

It is to be remembered that many of the following cases refer only to individual lots encountered and it is not to be understood that the articles named are usually, or even frequently, inferior.

Acetone. Commercial varies in composition and distills at from 50° to 70° C.—W. L. SCOVILLE.

Acid, Lactic. Usually runs low by U. S. P. method of estimation, nine samples ranging from 72.6 percent to 74.7 percent. If the lactide were all included all samples would show a neutralizing power above 75 percent.—W. L. SCOVILLE.

Acid, Phosphoric. Four samples assaying 85 percent were colored brown by a trace of organic matter.—E. L. PATCH.

Acid, Tannic. Crude acid, containing traces of gums and resins, is frequently offered. It is compact, heavy and usually dark in color.—W. L. SCOVILLE.

Acid, Tartaric. Lots are found containing traces of copper.—E. L. PATCH.

Alcohol. Two lots of cologne spirit darkened and precipitated with Solution of Nitrate of Silver. One lot had considerable color and excess of organic matter.—E. L. PATCH.

Ammonium Bromide. Lots were very dirty but met chemical tests of U. S. P.—E. L. PATCH.

Antipyrine. One sample slightly off color, melted at 110°. Impurities due to careless manufacturing.—E. H. GANE.

Arnica Root. Is reported heavily mixed with some foreign roots. As high as 75 percent of certain unidentified roots has been found in market samples.—E. H. GANE.

Asafoetida. Seventeen samples gave from 1.8 percent ash to 62.45 percent. From 50 percent to 70 percent alcohol soluble material for most samples, but the range was from 37.6 percent to 76.27 percent.—W. L. SCOVILLE.

There is a marked difference in methods of stating the alcohol soluble contents. Some extract with alcohol, evaporate at low temperature to soft extract, and give the result as alcohol soluble contents. Others extract with alcohol, weigh the

residue and call the difference alcohol soluble contents. In this method water and all volatile matter is included.

	Ash	Insoluble in alcohol	Volatile matter	Alcoholic extract	Total alcohol soluble
1 Mass	5%	29%	16.5%	51.5%	71%
2 Powd.	28%	53.7%	5.3%	41%	46.3%
3 Mass	32.5%	38%	15.5%	46.5%	62%
4 Lump	15%	46%	14.5%	39.5%	54%
5 Powd.	22%	48%	—6%	46%	52%
6 Lump	23%	42%	12%	46%	58%
7 Powd.	43%	66%	8%	26%	34%
8 Powd.	39%	+68.5%	7.5%	24%	31.5%
9 Powd.	36%	63.5%	11.5%	25%	36.5%
10 Lump	50%	64%	6%	30%	36%
11 Lump	+56%	70%	10%	20%	30%
12 Mass	—5%	29%	16.5%	+54.5%	71%
13 Powd.	50%	82%	6%	—12%	—18%
14 Lump	16%	—28.5%	+21.5%	50%	+71.5%
15 Powd.	25%	54.5%	8.5%	37%	45.5%

Lots 9 and 15 were labeled to contain 15 percent of Magnesium Carbonate. Lot 8 was labeled to contain 25 percent ash.—E. L. PATCH.

No. 1 ash 6.39 percent, alcohol soluble 43.01 percent. No. 2 alcohol soluble 25.09 percent. No. 3 alcohol soluble 35.52 percent. This contained a large amount of starch. Several lots have been rejected at the port of New York owing to the presence of an excessive amount of terebinthinous oleoresin resembling clemi. Much of this variety has, however, found its way into the market through other ports.—E. H. GANE.

Aspirin. Samples had melting point of 130° to 136° C.—W. L. SCOVILLE.

Belladonna Leaf. Two-thirds of all samples adulterated with Ailanthus or with poke berry leaves.—PHARM. ERA.¹ Two lots assayed only 0.309 percent and 0.30 percent. Powders have been offered from abroad consisting of the whole plant powdered. "Italian" belladonna powder has also been offered consisting of the above, mixed with some other leaf adulterant.—E. H. GANE.

Buchu. Long buchu is sometimes adulterated with klip buchu from Diosma fragrans.—WM. MANSFIELD.

Burgundy Pitch. Market samples are mainly if not wholly artificial. No house will guarantee to furnish the true article.—E. H. GANE.

Calamine. A fictitious product. Did not contain zinc.—E. L. PATCH.

Calcium Bromide. One lot assayed 97.08 percent and contained trace of bromate. Other lots assayed 82.45 percent, containing excess of water. U. S. P. standard 97 percent.—E. L. PATCH.

Calcium Chloride. Pure—fused. Alkaline reaction.—E. L. PATCH.

Calcium Phosphate Præcip. U. S. P. Labeled U. S. P. Chloride 2 percent did contain 3.1 percent. Other lots contained 0.22 percent, 0.33 percent, 3.9 percent, 2 percent.—E. L. PATCH.

Camphor. Specific rotation varies from 41° to 43°, showing that the amount of adhering oil varies.—W. L. SCOVILLE.

Ceresin. Varies in melting point from 58° to 65°.—W. L. SCOVILLE.

¹ It is probable that most of these samples represent but a few, perhaps only one, importation, so that the proportion stated is very misleading.—H. H. R.

Cinnamic Aldehyde. Adulterated with a mixture of three parts benzyl benzoate and one of cinnamic aldehyde.—PHARM. ERA.

Colocynth. Is still found to contain excessive quantities of seeds.—E. H. GANE.

Copper Sulphate U. S. P. Many lots contain excess of iron.—E. L. PATCH.

Cudbear. Varies greatly in coloring power and salt contents. Salt varies from 2 percent to 60 percent.—E. L. PATCH.

*Dermatol.** One lot contained 46 percent dextrine. One 36 percent bismuth subgallate and the balance potato starch, sand and clay. Another zinc oxide, gypsum, lead chromate and green sand.—DR. HUBNER.

Ether Acetic. Boils 65° to 80° C. in fractioning.—W. L. SCOVILLE.

Euphorbia Pilulifera. One lot offered consisted largely of foreign grasses. Not over one-third was genuine material.—E. H. GANE.

Flaxseed Meal. Contained following percentages of oil: 28.5 percent, 29.65 percent, 25.1 percent, 29.6 percent, 30 percent, 35.2 percent, 34.5 percent, 34.4 percent, 34 percent, 35.6 percent, 35 percent, 32.5 percent, 31 percent.—E. L. PATCH.

Fusel Oil. Is sometimes deprived of the high boiling constituents to which its usefulness is mainly due. One lot distilled over a range of 90° to 120° C. only, whereas the valuable and largest fraction should distill at 120° to 130° C.—E. H. GANE.

Gelatin. May contain Arsenic.—APOTHECARY.

Gentian Root. Should yield not over 6 percent of ash and at least 33 percent of water soluble matter. Adulterated powder is easily detected by making these determinations. Gentian for veterinary purposes is frequently adulterated. Two samples gave 2.1 percent and 4.7 percent ash and 12.6 percent and 13.9 percent water soluble matter.—E. H. GANE.

Glycerin. Still difficult to get glycerin which will not develop unpleasant odors in acid solutions. The nature of these bodies is not yet fully divulged, though it is probable that some are of an aldehydic nature.—W. L. SCOVILLE.

Guarana. Assayed 4.25 percent, 4.5 percent, 4.5 percent, 4.2 percent, 4.36 percent, 4.6 percent, 4.4 percent alkaloid. Two percent ash.

Guaiac.

	Acid No.	Ash	Insol. in alcohol
No. 1.....	117	0.6%	2.3%
No. 2.....	71.4	5.2%	19.2%
No. 3.....	75	4%	35%
No. 4.....	72.4	5%	19.3%
No. 5.....	72.4	1.6%	13%
No. 6.....	72.4	4%	20%

E. L. PATCH.

Goldenseal. Two small lots assayed 3.13 percent and 3.6 percent hydrastine.—E. H. GANE.

Hyoscyamus. Six lots assayed 0.072 percent, 0.07 percent, 0.108 percent, 0.08 percent, 0.103 percent.—E. L. PATCH.

Infusorial Earth. Contains 2 percent to 12 percent of matter soluble in weak alkaline solutions.—W. L. SCOVILLE.

*See Discussion at end of report.

Ipecac. Four lots assayed 2.07 percent, 1.79 percent, 1.83 percent, 1.82 percent.—E. H. GANE.

Iron Chloride Solution. Assays 11.46 percent, to 13.25 percent Iron—W. L. SCOVILLE.

Iron Reduced. Assays 88.8 percent to 96.5 percent.—W. L. SCOVILLE.

Iron Sulphate Dried. One lot labeled U. S. P. assayed only 67.5 percent, $(\text{FeSO}_4)_2 + 3\text{H}_2\text{O}$. Other lots, 93.8 percent, 98.78 percent, 89.19 percent, 93.8 percent, 88.12 percent, 82.61 percent, 89.54 percent.—E. L. PATCH.

Jalap. Four lots assayed.

	17.4% resin	1.19% ether soluble resin
	6.92% resin	0.92% ether soluble resin
	21.08% resin	1.43% ether soluble resin
Ash 3.9%	8% resin	0.96% ether soluble resin

E. L. PATCH.

Kieselsguhr.

	Color	Ignited	Water soluble	Acid water soluble	Carbonates
Lot 1	Grayish....	7% loss	3.2%	5.6%	trace
Lot 2	Dark gray..	14% loss	1.2%	27.2%	excess
Lot 1	washed with acid water.		0.5%	1.5%	none

E. L. PATCH.

Lavender Flowers. Most of the lavender flowers have been partially exhausted of their oil.—S. K. F. Co.

Licorice Extract Powdered. 35.6 percent to 65.6 percent water soluble matter.—W. L. SCOVILLE.

Lupulin. Four lots gave:

Ash	12.92%	Ether Soluble	58.19%
"	9.46%	"	65.6%
"	12.64%	"	57.09%
"	12.61%	"	44.94%

E. H. GANE.

Lycopodium. Artificial products consisting of powdered resinous substances are offered in place of the genuine for technical purposes. Some of these closely resemble the true article.—E. H. GANE.

Male Fern Extract. Adulterated with 25 percent castor oil. It contained only 8 percent crude filicin instead of 24 percent.—MERCK & Co.

Malt-Powd. Extract. Converts from 30 to 50 times its weight of potato starch.—E. L. PATCH.

Magnesium Salicylate. Ignited gives 12 percent MgO .—E. L. PATCH.

Magnesium Sulphate. Contains 0.35 percent to 0.4 percent chloride.—E. L. PATCH.

Manganese Oxide. Labeled "precipitated"—Was a black, very gritty powder partially soluble in oxalic acid solution. Was native oxide.—E. L. PATCH.

Methylene Blue.—Twenty-three samples yielded 0.04 percent to 3.67 percent ash. Less than half the number gave 0.5 percent ash or less.—W. L. SCOVILLE.

Migrainin No. 1. Eighty-four percent Antipyrine, 6 percent Citric Acid, 3.5 percent Magnes. Citrate. No. 2—50 percent Antipyrine, 40 percent Acetyl Salicylic Acid, 10 percent starch.—DR. HUBNER.

Myrrh. Runs more uniform than formerly; 32 percent to 42 percent alcohol soluble matter. One sample 64.4 percent.—W. L. SCOVILLE.

Nux Vomica. Six lots gave 1.27 percent, 1.49 percent, 1.51 percent, 1.40 percent, 1.36 percent and 1.28 percent Strychnine.—E. H. GANE. Said to be adulterated with ground olive pits. Identified microscopically. Warming with a 0.5 percent solution of paraphenylene diamine a red brown to red color is formed instead of a gray or blackish gray deposit formed with genuine nux vomica.—REPORT PHARM.

Oil Cottonseed. Samples offered as winter pressed solidified when placed in ice chest. Others did not become cloudy.—E. L. PATCH.

Oil Lavender. Is adulterated with commercial phthalic ester. It has little odor and a high ester value. A comparatively small quantity added to an oil of low ester value raises this figure considerably.—T. DELPHIN.

Oil Lemon. Is mixed with alcohol.—N. A. R. D. NOTES.

Oil Wintergreen. No reliable test has yet been published that will identify mixtures of true oil of wintergreen leaf and oil of birch with Methyl Salicylate. Some dealers claim to have such a test but they carefully refrain from giving it publicity.—E. L. PATCH.

Olibanum. Ash 20 percent, 30.5 percent, 39.5 percent.—E. L. PATCH.

Opium. Case of 220 lbs. Product did not resemble ordinary Smyrna opium. Surface was polished with no trace of ordinary wrappings. Some lumps very hard had 5 percent morphine and some only 1-10 percent.—PHARM. ERA.

Oxgall—Powd. Had 3 percent of moisture. Aqueous solution was precipitated by Alcohol. Manufacturer claimed it was purified by U. S. P. method and evaporated in vacuum drier. Unable to make a purified powder that will stand the alcohol test for purified pilular.—E. L. PATCH.

Pancreatin. None will meet the pharmacopœial milk test literally interpreted, namely, that there is no coagulation. The nitric acid with milk unacted upon by pancreatin will produce a firm coagulum or clot. After the action of pancreatin the result is a granular precipitate, not a coagulum. Fresh milk can be peptonized sufficiently for medicinal use without developing more than a slight bitter taste. If carried until decidedly bitter there is no decrease in the amount of granular precipitate.—E. L. PATCH.

Papain. Action on dried beef fibrin. One part digests:

		In Neut. Sol.	In Alk. Sol.			In Neut. Sol.	In Alk. Sol.
No. 1.....	19.5	24.2	No. 2.....	18.2	19.2		
No. 3.....	15.2	24.2	No. 4.....	12.1	22.9		
No. 5.....	16.4	24.2	No. 6.....	13.2	22.4		
No. 7.....	16.1	21					

E. L. PATCH.

Phenacetin. Melts at 130° to 135° C.—W. L. SCOVILLE.

Pinkroot. Supplies of genuine root are now more easily obtainable, collectors evidently taking more care in gathering the drug.—E. H. GANE.

Pipsissewa. U. S. P. recognizes leaves only. All market lots consist of leaves and stems. Average proportion of leaf is 72 percent.—E. L. PATCH.

Podophyllin.

	Ale. solubility	Ash		Ale. solubility	Ash
No. 1	56.5%	4.3%	No. 2	98.7%	0.5%
No. 3	98.5%		No. 4	98.4%	
No. 5	99%	0.4%	No. 6	99%	0.6%
No. 7	99.5%	0.3%	No. 8	99.7%	0.4%

E. L. PATCH.

Potassa. Assays 87.3 percent to 90.08 percent.—W. L. SCOVILLE.

Potassium Carbonate. Assays 90.4 percent to 98.35 percent.—W. L. SCOVILLE.

Potassium Nitrate. Chloride in three samples—1.55 percent, 1.55 percent, 3.1 percent.—E. L. PATCH.

Quinine Alkaloid. May contain excess of moisture. Assays 68 percent to 87 percent monohydrated quinine. U. S. P. should assay 90.5 percent.—E. L. PATCH.

Quinine Tannate. The quinine in different makes ranges from 9 percent to over 30 percent.—COUNCIL ON PHARM. & CHEM.

Red Saunders—Powd. For some unknown reason shippers wet this down before sending. It contains from 37 percent to 44 percent of water and should not reasonably have more than 5 percent to 7 percent.—E. L. PATCH.

Salophen. Adulterated with 25 percent Acetanilide.—DR. HUBNER.

Santonin. Largely adulterated with acetanilide, boric acid and borax.—AM. DRUG.

Scammony Resin. Adulterated with powdered scammony.—P. GUIGEA.

Sodium Phosphate Purified Dried. Clean and white but contained 3.56 percent of anhydrous Sodium Sulphate. Lost 1 percent of water when dried at 100° C. Another lot labeled in the same way contained 2.58 percent of sulphate.—E. L. PATCH.

Sodium Theobromine Salicylate. Substitute for Diuretin.

Lot 1 12% of theobromine instead of 40%.

Lot 2 25% of theobromine instead of 40%.

Lot 3 25% of theobromine sodium and 75% of sodium salicylate.

—DR. HUBNER.

Spirit Ammonia Arom. Four samples were all right. Forty-six samples varied from standard.—KENTUCKY STATE BOARD OF HEALTH.

Spirit of Camphor. Sixteen samples standard and fifty-one below standard.—KENTUCKY STATE BOARD OF HEALTH.

Spirit Lemon. Five samples tested from 0.1 percent of official to 45 percent.—MASS. STATE BOARD OF HEALTH.

Spirit Peppermint. Thirty-five samples assayed from 4 percent to 72 percent of official.—MASS. STATE BOARD.

Tablet Gum. Was white potato dextrin.—E. L. PATCH.

Thiocol. Adulterated with Sodium carbonate, milk sugar and magnesium sulphate.—DR. HUBNER.

Tinct. Belladonna. Ten samples ranged in extractive from 1.05 percent to 3.70 percent. In alcohol from 26.4 percent to 47.5 percent.—I. W. POLLARD.

Tinct. Digitalis. Ten samples ranged in extractive from 1.08 percent to 3.45 percent. In alcohol from 21.6 percent to 40 percent.—I. W. POLLARD.

Tinct. Hyoscyamus. Ten samples ranged in extractive from 1.04 percent to 4.27 percent. In alcohol from 23.9 to 40.3 percent.—I. W. POLLARD.

Tragacanth. Adulterated with India gum, from *stereulia urens*.—H. C. FULLER.

Wax. Many samples are one-half paraffin, due to the use of artificial comb or foundation.—DR. KEBLER.

Zinc Oxide. All contains a trace of lead. It is so slight that it can be easily overlooked if the solution in hydrochloric acid is much too strong in acid. If properly acidulated it will come down and can be identified by the confirmatory tests of precipitation as chromate or as sulphate. The U. S. P. digests 1 gm. in 10 cc. of diluted hydrochloric acid and 10 cc. of water until saturated, removing the undissolved portion by filtration. The amount of zinc oxide specified should always dissolve completely.—E. L. PATCH.

Florence Brand, White Seal, American Oxide. Is a fine, soft powder assaying 99.76 percent oxide of zinc but contains a trace of lead.—E. L. PATCH.

SUPPLEMENTARY REPORT.

The preceding accounts relate chiefly to drugs actually taken from the American market. The following relate to drugs offered for import, and refused admission by the Federal authorities:

Senna. At a certain season of the year, a form of India Senna known as "Monsoon Senna" is offered. This is senna from the genuine India senna plant, but gathered after the monsoon. Several lots have this year been offered which present prominent differences from the customary appearance. They are narrower, thinner, more acute, on a very slender, almost capillary rachis, of a golden-yellow color, and much inclined to be curved or hollowed out on one edge. They are also more hairy than the original form. These characters agree very well with those of *Cassia lanceolata* Forskahl, a well-known substitute or adulterant of India senna. This article is now in process of investigation.

Senna siftings, a product consisting of impurities sifted out of Alexandria senna, has been sold as senna. In this product about 75 percent usually consists of true senna leaf in fine pieces which are removed together with the impurities which represent the other 25 percent. Notwithstanding the plain nature of this case, the Government failed to convict of either adulteration or misbranding.

Strophanthus. Much less of this drug is imported than formerly, and the brown seed (*S. hispidus*) has nearly disappeared from the market. Recently, however, the seed of *S. Eminii*(?) has been offered for import, both alone and mixed with the genuine. This seed is short, rather blunt, broad and flat, the ridge inconspicuous, and of a pale or whitish color with scarcely a hint of green. Its surface is densely hairy and many of the hairs are disarranged in position, so that they project and give a shaggy or bristly appearance to the seed.

Euphorbia Pilulifera. A very large shipment of this drug was wholly spurious, doubtless by mistake, a different and closely similar species of *Euphorbia* having been substituted.

Powdered Drugs. The custom prevails of importing drugs like Buchu, Uva Ursi and Cubebs with the stems admixed, under such names as "Buchu with stems," and then powdering all together and selling as the straight article.

The presence of olive pits in powdered drugs has ceased, at least for the time, and powdered drugs are much more generally pure than formerly.

Gentian. There is a tendency for this (and also Jalap, Inula, etc.) to be dried by an excessive degree of artificial heat, so as to develop a distinct odor of scorching. Jalap is not essentially injured thereby, but the constituents of Gentian and Inula are apt to suffer seriously.

Ergot. This whole subject is in a deplorable condition. Most of the importations of the year have been seriously below grade and the standards of the Pharmacopœia require complete and radical revision.

Correlation of the Pharmacopœia With the Law. This subject also requires radical and thorough action by the Revision Committee. A separate study is being made for discussion at the Denver meeting.

Belladonna. Belladonna leaves have this year been much subject to adulteration with the leaves and tops of Phytolacca, an impurity which is peculiarly difficult of detection.

Recently the adulteration of the root with phytolacca has reappeared.

Rhubarb. This still continues to arrive with hollow or blackish centers, the result of incompletely drying by artificial heat and then leaving the damp central portion to ferment and decay. No test has been devised for detecting this defect in the powdered drug. It seems to respond even better than sound roots to the tests at present in use.

Parcira. Large shipments heavily mixed with stem pieces have been offered.

Ipecac. During the year much of that offered has been called "Panama Ipecac," and has passed for the Carthagena article. There are, however, some slight differences from the latter and the botanical origin of this form is a decidedly interesting problem.

Calamus. Much more of the natural or unpeeled drug, that which ought to be used, is arriving than formerly.

Arnica Root. This drug continues to be much adulterated.

Spigelia. The continued substitution and admixture of spurious roots appears to be due rather to error than intent. It is useless to attempt its determination in any other way than by powdering and examining with a microscope.

Apocynum. No one yet knows which species ought to be used, nor how to identify it if he did.

Berberis. The same may be said of this as of the last.

Aconite. Evidence accumulates that the roots which have been partially exhausted of their starch by the growth of the stem and thus hollow or shrivelled, are richer in alkaloid.

Much "Spanish Aconite" has been offered. It is extremely difficult to determine the species that yield aconite by an examination of the roots, with suffi-

cient certainty. This form is always low in alkaloid and is probably a different species from the official.

Red Cinchona. Most of that sold is not genuine, being either a hybrid bark, with some *succirubra* parentage, or, ordinary yellow chip bark.

Granatum. There is not a question that the root bark is much richer in alkaloid than the stem bark and their promiscuous sale in indefinite mixtures, should not be tolerated.

Coto. No genuine coto or paracoto has been offered during the year.

Thyme. Various species of *Origanum* continue to be imported as thyme, the flavor being practically the same.

Marrubium. A large amount which consisted chiefly of *Ballota* was rejected.

Crocus. Under the stimulating influence of rigid enforcement of the standards, an almost marvelous change has occurred in the character of this drug, which is now almost invariably genuine and pure, whereas formerly it was mostly sophisticated.

Matico. The importation of the genuine leaf has been re-established.

Sakia. This drug has to be carefully watched. Several species other than the genuine closely resemble it and are largely offered in late summer.

Buchu. The high price of this article continues to tempt the addition of excessive amounts of stem, sand, etc.

Proprietary articles which are supposed to contain it appear frequently to be made up without it, or with so little that it is utterly ineffective.

Anise. Great quantities containing much weed seed, gravel and pellets of dirt arrive. The ash test should be rigidly applied.

Black Mustard. Large quantities arrive that contain admixtures of colza, rape, charlock, etc., and a good deal is more or less mouldy.

Cardamom Seeds. Nearly all the decorticated cardamom seed is adulterated with spurious seed, the usual amount being about 50 percent. Rigid exclusion of such importations having been practiced, the pure seed is beginning to be offered, though of course at a much higher price.

Alocs. There has been a great improvement in the quality of the Socotrine variety. Moka or Stinking aloe, so abundant last year, has ceased to come and a fine quality is being imported.

Benzoin. The quality of this drug has deteriorated during recent years, the amounts of vegetable impurities being so great as to show clearly that they have been intentionally added.

H. H. RUSBY.

DISCUSSION.

Dr. H. H. Rusby, New York, asked one correction, which he thought had been made before sending in the report, but which had escaped his notice: It had been stated that more than two-thirds of the samples of belladonna leaves were adulterated with *ailanthus*. This was true in a certain sense, but it was misleading. For instance, if a very large lot of the drug was sold in London, and got into the hands of a number of different people, when the collector went around and gathered his samples of different dealers, he was really getting samples of that same original lot, and not of different lots. In his opinion, there was nothing like two-thirds of the belladonna leaves imported adulterated, nor one-tenth adulterated, with *ailanthus*.

Prof. W. A. Puckner, Chicago, said the committee in their report had used the trade-

mark names "dermatol," "thiocol" and "migramin," controlled by certain firms, and indicated that they were adulterated in different ways. It seemed to him rather remarkable, if true, and highly unethical, that a firm putting out dermatol should at the same time adulterate it in several different ways. He imagined that the terms were used rather loosely, and possibly there were substitutes on the market. Dermatol was the trade-mark name for bismuth subgallate, and he imagined that the different products referred to were not really dermatol.

E. T. Gordon, Philadelphia, thought that in reporting on dermatol, bismuth subgallate was probably intended, as the report seemed to indicate that bismuth subgallate was the subject of investigation.

Dr. J. M. Francis, Detroit, asked what was the title of the report, and the Chair answered that this was the report of the Committee on Drug Market.

Dr. Francis said he did not believe the report was a correct indication of the condition of the drug market. For instance, if a report should be received, based on the work of some statistician, stating that there were a certain number of horse-thieves in Iowa, so many in Idaho, and so many in Tennessee and New York, and a certain number of murders committed in different states, and all were dumped together in one report, a visitor from Mars or some other planet might conclude that this was a terribly wicked world—because of the total absence of proportion. Listening to this report, a man unacquainted with drug conditions in the United States would suppose that the people in this country were suffering from a lamentable state of affairs, and that the trade in crude drugs was absolutely rotten. As a report showing how things were sophisticated, it was interesting, but as a paper showing any true idea of the proportion of drugs sophisticated to pure drugs it was absolutely worthless. Dr. Francis said he wanted to go on record as saying, first, that the pharmacists of the United States were enjoying the use of as pure a line of drugs as were used by any civilized nation in the world; and, secondly, that the conditions in the United States drug market today were better than ever before in this country. He believed Dr. Rusby, who was at the head of drug imports at the port of New York, would bear him out in this statement. He did not mean to say that there were no sophistications, and did not mean to say that there was not ample room for reform and improvement; but he did want to state that the druggists of this country had as good drugs on the average as they had anywhere in the world, and that the conditions were improving, and were better than they were five years ago, or perhaps even two years ago. Because of the lack of any statement of proportion, he thought this report was liable to produce a false impression.

Dr. Rusby stated that the real intent of the report was to call attention to certain forms of adulteration that had been seen, and that there was not the slightest intention in this report to show the proportion of adulteration. He was glad Dr. Francis had brought this matter up, but he was compelled to say that conditions were not quite so ideal as Dr. Francis seemed to think. Recently, a drug miller in New York had informed him that he had been asked to bid on several carloads of powdered drugs, but did not do it, because he would be underbid by people in certain cities in parts of the country nearer to the setting sun than New York, and these people would supply these powdered drugs at lower prices than he was able to purchase them for. Dr. Rusby said that when people in trade could not bid against others under such conditions as these, he was satisfied that "something was going on"—though conditions were better than they were. The idea was to keep right at it, and not let up on these things. It must be remembered that there were people who worked systematically, especially in the matter of powdered drugs, to furnish an adulterated article.

Dr. Albert Schneider, San Francisco, replying to Dr. Francis, agreed that the report was possibly misleading as to percentage of adulterations; but it was not possible to get actual percentages of adulteration. In the section he came from, the West, where he had done his work, the percentage of adulteration of vegetable drugs and powdered drugs, was not far from 50. That did not indicate an ideal condition, to his mind. Nor did he think that conditions had improved at the present time. He had occasion to examine a number of spices in his state laboratory, and upon opening a container labeled pepper of standard quality, he had examined it under the microscope and found it to contain 80 percent of

ground olive pits. It was a "scientific combination," with the odor of black pepper, and a small amount of capsicum added to give it pungency.

Another case Dr. Schneider told of was that of an examination of some samples of supposed Banda mace for a wholesale spice house in San Francisco. The first sample of mace examined was found to contain about 25 percent of Bombay mace. This was reported to the house, and they became indignant, claiming that they imported only mace of the first quality. They requested a re-examination, and it was again reported that Bombay mace was present. He was finally given a sample of the crude article, from which they declared they had made their powdered mace. This was examined and found to be genuine, first-quality Banda mace. The trouble was finally located, and it was found that they had imported the genuine Banda mace, but before it was shipped to San Francisco it was placed in the hands of a miller in New York City to rough-grind it, and this miller had taken out a certain percentage of the crude Banda mace and substituted the inferior Bombay mace.

A third instance was that of maté. Dr. Schneider said he did not recall a single sample of genuine maté having been in the state laboratory. The samples they had under investigation were highly adulterated, and in some instances contained only a small amount of maté, and in others no trace of it, the substitute being a common variety of mallow leaves. The house sent various samples of maté, which they said they imported through the port of San Francisco. During a recent visit to New York, he had found considerable quantities of the genuine maté, and he had reported to this house that the genuine article was imported and could be had. Only a few days ago he had received another sample of the powdered article for examination, and found it to contain 80 or 90 percent of mallow leaves.

Dr. Francis called attention to the fact that the two gentlemen most severely criticising American drugs were both pharmacologists and botanists, one located at the port of New York and the other at the port of San Francisco. He asked if the opinions expressed referred to the drugs that were commonly ground and sold by the American millers, or to drugs shipped in from other countries that they had turned back.

Dr. Rusby replied that he spoke of certain lots that were received, but nevertheless to a considerable amount. Dr. Francis had told him this morning that nearly all the lupulin had too much sand in it, and showed too much ash. Nearly all this drug that came into New York was free from sand—a good article. Yet when the druggist tried to get it, he had difficulty. The trouble was, that the brewers picked up all the good lupulin, and when there was a large importation so poor that the brewers would not have it, it was pushed onto the retail druggists.

The Chairman said he believed that the point Dr. Francis made concerning this report was well taken, in so far as it was entitled a report of the Committee on Drug Market. He believed that it would carry the idea that this was a report of the condition of the drug market, whereas the report showed that it was a report on adulterated lots of drugs. There were a great many good lots of drugs, of course, of which no mention was made. Mention was made of a few drugs of this class, but that made the report, if anything, still further misleading. This report covered not only drugs, but chemicals, which latter, as a general thing, he had not found to be adulterated, in his personal experience, or that the quality of chemicals was, as a rule, low. He had known of just such instances as were reported by the committee, but they were greatly in the minority. He thought it might not be out of place to have a paragraph in the report explaining the fact that the committee was not trying to give the proportion of adulterated to genuine drugs.

Dr. Rusby said that as the one representative of that committee present, he would assume the authority to make such a change in the report, as he thought it should be made.

Charles E. Vanderkleed, Collingswood, N. J., said he thought the objection was to the name of the committee. If the title of the committee was changed to "Committee on Adulterations," it would exactly cover the field that the committee worked in. If the committee did not consider it was its function to report on the relative proportions of adulterated drugs and chemicals to those of good qualities on the market, he thought it would be well to change the name of the committee as indicated, thus avoiding any misunderstanding as to its function.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

BUSINESS AND THE OPIUM TRAFFIC.

G. H. P. LICHTHARDT, PH. G., SACRAMENTO, CALIF.

"If opium were taxed \$5 per pound, smuggling would cease and the Government would obtain a large revenue," said U. S. Customs Surveyor Duncan E. McKinley yesterday in discussing the matter.

"It is impossible under the present conditions to prevent the smuggling of opium at this port. It would require about 100 men to guard properly one of those big China steamers."

"Opium in large quantities also is being brought into this city by railway from Mexico, hidden in consignments of merchandise and the baggage of passengers. There is no reward for the informer and therefore no incentive for any one to cooperate with the authorities. Hence I believe in the levying of a duty on the drug."

The above is a quotation from an article which appeared in a recent Sacramento paper under the title "Stop Smuggling by Taxing Opium."

Here we have isolated the germ which is causing the malignant growth of the traffic in human lives and the souls of men, through the use and abuse of narcotics. What is the use of a state like California spending large sums of money, through the Board of Pharmacy, in trying to abate this scourge when a U. S. Customs Surveyor advocates such sentiments as expressed in the above interview.

"The Government would obtain a large revenue." Yes, and so would the people who would debase the weak and unfortunate through the sale of the opium to the slaves of the drug.

This is where the restrictions in the sale and importation of narcotics hits the hardest, not only in the United States, but in every country on the globe; this is the same old cry that is heard when any reform for the wellbeing of the people is advocated, this shout from the cold-blooded commercial system of the world, "It hurts business."

It is this phase of the narcotic situation that has come most strongly to my notice, for my official duties bring me in contact with it from every angle. Often a physician has reported to me that a patient of his is receiving treatment for a narcotic habit from a so-called doctor in some other state, and upon examining the remedial agent sent we find it to be essentially a solution of morphine or other habit-forming drug. We cannot stop this importation into our state, all that we can do is to arrest the user when the narcotic is found in his possession.

for in California it is against the law for any one except a licensed physician, dentist or veterinary surgeon to have such drugs in his possession.

Are we, as representatives of an ancient and noble profession, going to allow this blot upon our calling to remain? Or are we going to fight commercialism and see that those who are engaged in this terrible business are placed where they belong, and that our country does not sanction the traffic by imposing a duty upon smoking opium, even if it takes a thousand men to inspect a China steamer or to inspect all of the consignments of merchandise, or the baggage of passengers from Mexico?

DISCUSSION.

Mr. Lichthardt said that California had at The Hague Opium Conference one of the three commissioners appointed to represent the United States, and he wished that the members would read some of the speeches made at that Conference by the representatives of the large countries. There was one representative who said it was necessary to feed opium to certain people because they demanded it; and yet, on reading between the lines, it was evident that the purpose was to keep these people in subjugation. The reason for the existence of the narcotic evil was because there was money in it for some people. The whole Pacific Coast was confronted with this great narcotic question. Not only was it the opium question, but they had a lot of Hindus there who carried their hasheesh in their turbans, or had it in sticks and put it under their lips, or snuffed it to produce *cannabis indica* intoxication. He had brought this question up three years ago before at this Association, but it wasn't considered big enough to engage its attention. Since then, Italy and Portugal had brought it before this Opium Conference in Holland. He expressed his conviction that the place to stop these things was at the start, instead of trying to stop the flood when the dam was broken.

Mr. Charles J. Clayton, of Denver, gave it as his opinion that the placing of a tax upon the handling of an article as a restrictive measure for the sale of it was a fallacious procedure. When a man had imposed upon him a tax for the sale of liquor, for instance, if he had no desire to sell liquor before, he now felt the necessity of getting back the money he had paid as a tax. Should a tax be placed upon the sale of opium, there would be all the more inducement for those who smuggled opium to avoid the tax, because they could make a larger profit thereby.

Mr. F. T. Gordon, of Philadelphia, responding to Mr. Lichthardt's remarks in regard to the motive for the sale of opium, said that the Government of India drew a large part of its revenues from the tax on opium. It was a matter of history that England went to war with China back in the fifties to force China to open her ports to the opium traffic. England claimed that large parts of India were dependent upon the cultivation of the poppy plant as the sole means of livelihood and support; but the motive of the government officials was to get that tax from opium.

China, he said, was doing her best to stop the traffic. He knew from personal information that large tracts of land formerly used for cultivating the opium poppy were now used for ordinary cultivation, and that the stoppage had caused real distress among the agricultural population. The real "nigger in the woodpile" was the desire of the Indian Government to continue the cultivation of opium because of the revenue derived from it.

Mr. Thomas F. Main, of New York, remarked that Mr. Gordon was relating ancient history, and that today Great Britain was a member of The Hague Conference and had joined the other nations most heartily in the effort to abate the opium traffic.

Dr. Albert Schneider, of San Francisco, said that among his friends in San Francisco was one Lung Ko Chu, a Chinese editor, who had made a trip to China not long ago, and on his return called on him and said: "You understand that the Chinese nation has about succeeded in getting rid of the opium habit," but added that, in Northern China, the American Tobacco Trust had sent a small army of young men, who were instructed to distribute cigarettes free of cost to the Chinese people. The method was somewhat as follows:

A young man assigned to a certain town or district would go to a street-corner, light a cigarette and begin to smoke. Pretty soon a crowd of men, women and children would gather around, and he would hand out the cigarettes to them; and it was proving a very simple method of teaching the Chinese the cigarette-smoking habit as a substitute for the opium habit.

Dr. Schneider said this had struck him as being a highly contemptible practice, and the American nation and the British government were placed in the inconsistent attitude before the world of doing all they could at the Opium Conference to stamp out the opium habit, while at the same time they were doing nothing whatever to prevent the introduction of a new habit equally as bad. This situation was accentuated from the fact that, as his Chinese friend had told him, while the American Tobacco Trust had established three large cigarette-factories to supply the Northern-China field, they were doing nothing at all in Southern China, for the simple reason that that territory had been turned over to the British manufacturers, who had full possession of it and were making cigarette-smokers of the Chinese in that great division of the Celestial Empire. Lung Ko Chu had told him that one of the first things that happened upon his arrival in China was to have offered to him some cigarettes, with the statement that it was now the custom of all the officers and officials of China to smoke them.

Mr. Lichthardt said the statement had been made at his State Association in June by Mr. Finger, their official representative at The Hague Conference, that the Germans had contended that codeine was not a habit-forming drug, and he had requested him when he met the pharmacists of other States to make inquiry if they knew of any real case of codeine habit, and if so, to communicate with him, as he was very much interested in this subject. The question had come up in connection with antikamnia and codeine tablets, and it had been claimed it was an antikamnia and not a codeine habit that was formed.

Prof. W. C. Anderson, of Brooklyn, asked Mr. Lichthardt if it was to be understood that he was in favor of the anti-narcotic legislation proposed at Washington.

Mr. Lichthardt replied that he was not, but had referred to it because it was the first thing that came into his mind. He was satisfied, however, that it contained a lot of things that were bad. He said he would like to see the American Pharmaceutical Association go on record—if it had not already done so—as favoring some kind of restriction of this traffic. There was a little logging train that came into the State of California once a week with this "dope," and he was heartily in favor of some law that would make it a crime to ship narcotics into a State in that way. The figures as to narcotics imported into the United States annually ran into tons as to opium, and thousands of pounds as to cocaine, morphine and the like. Only one or two percent of this large amount was used for legitimate purposes.

Prof. Anderson said his reason for asking the question was that the writer had stated that numerous laws had been proposed restricting the sale of narcotics, and that they had been opposed, because there was money in the traffic. No retail pharmacist of this Association had a right to say that, because the American Pharmaceutical Association, the National Association of Retail Druggists, the State Associations and the Local Associations had all opposed the bill that had been pending in Washington, therefore the retail pharmacists of the country were opposed to the restriction of this traffic. He wanted the retail trade distinctly placed on record as being in favor of the restriction of the sale of narcotic drugs, and declared that there was no body of men that had worked harder for its proper restriction than the retail druggists. They had sacrificed their commercial interests time and time again for the welfare of the public, and would continue to do it. They did, however, protest against the enactment of laws that placed upon them a tax without any effect, and that was just what the laws proposed would do, impose a tax and make restrictions that could not be complied with, making the retail druggist a law-breaker and a criminal, when in purpose and in every sense of justice and honor he stood in the opposite attitude and for the protection of the public in every instance.

Mr. Charles M. Woodruff, of Detroit, said he did not know about what had been smuggled in, but the Commissioner of Internal Revenue had directed the attention of his house to

the fact that since the importation of opium for smoking purposes had been forbidden, the solid extract of opium had begun to be used as a substitute. They had looked over their record of sales for several years back without finding any evidence of that fact, but nevertheless they wrote the Commissioner they would discontinue the sale of solid extract of opium for any purpose, and would inform their branches and salesmen that it had been taken from their list and would not appear in future. He understood that other pharmaceutical houses had followed the same course. The indications were, therefore, that the prohibition of opium for smoking purposes had been effective.

With reference to pending legislation, Mr. Woodruff said that he had opposed the Foster Bill before the Committee on Ways and Means on behalf of six of the large pharmaceutical manufacturers. He opposed it, not because his people were opposed to some reasonable and effective legislation, but for the reason mentioned by Prof. Anderson, that it would impose heavy burdens on the drug trade without restricting the traffic.

He had placed his Association on record, as he had authority to do, as in favor of national legislation to prevent the practical nullification of State police laws by the natural operation of interstate commerce. He held that the States had ample police power to regulate the intrastate traffic in narcotic drugs. The State laws lacked uniformity, however, and were defeated in a large measure by the fact that a citizen of one State could buy from one in another State under practically no restriction except as related to the Postal Laws. It was unlawful now for anyone not a manufacturer or dealer to mail cocaine or any other thing of like character into another State, except to another manufacturer of drugs, a physician or druggist; but that did not restrict the sending of these articles by express or other means of transportation. Mr. Woodruff concluded by saying that he thought the drug trade was a unit upon the necessity of reasonable and effective national opium legislation.

Mr. F. H. Freericks, of Cincinnati, said he did not understand the gentleman from California to say it was the druggist who was at fault with reference to the narcotic evil. He thought he was correct in stating that he had in mind the indiscriminate traffic from other sources, and he believed it was due him that this be stated.

Mr. Lichthardt replied that if any part of his paper could be construed to put the American Pharmaceutical Association in the wrong light, he would be only too glad to strike it out. He knew from experience in his own State that it was not the druggists who were doing these things, but somebody else. He disavowed any purpose of reflecting upon the pharmacists of the United States.

A MEDICINAL PLANT GARDEN A VALUABLE ADJUNCT TO A COLLEGE OF PHARMACY.

FREDERICK J. WULLING, MINNEAPOLIS, MINN.

The fact that the College of Pharmacy of the University of Minnesota, when it was organized in 1892, asked and received authority from the University regents to establish a medicinal plant garden for research and instructional purposes, evidenced on part of the faculty a recognition of the importance of a medicinal plant garden as an integral part of the equipment of a college of pharmacy. Although the garden was not begun until a few years afterward, and then soon abandoned because of its distance from the college (it was made part of the garden adjoining my residence) and because of lack of both the necessary ground and funds, the desirability and even necessity of such a garden was never out of the mind of the faculty, and continued to be a part of my

administration policy for development as soon as the regents could be convinced of the need of such an adjunct to the college. The conviction on the part of the regents came before their ability to provide the necessary funds, but finally patience and perseverance were rewarded two years ago, when it was found possible to provide the college with sufficient money to begin a new garden on a fairly large and representative scale. The garden, on which up to the present about \$2500 have been expended, exclusive of site and salaries, has now been in operation for nearly two years, and although by no means complete, is firmly established and of proven value as an indispensable addition to the instructional facilities of the college. A plant laboratory to amplify the value of the garden has been authorized, and is now under construction. The walls of a substantial building, 32x61 feet in dimensions, adjoining the main college building, are now being reduced to a level of about six feet from the ground, and upon these a superstructure of steel and glass is to be erected at a cost of about \$5000. The interior structural and other fixtures will soon be decided upon, and will be of the very latest and most suitable pattern. Before the current year is gone an expenditure of around \$10,000 will have been incurred for the garden and plant laboratory. I mention this only to emphasize the two facts that the faculty and regents are in earnest in backing up their conviction that such a garden and plant-house are desirable and necessary additions to an institution teaching pharmacy, and that to provide such additions of a sufficiently comprehensive and representative character costs money. This paper is designed to point out in what ways such additions are valuable and necessary in the conduct of a good pharmacy course.

I have asked Professor Newcomb, to whose agricultural knowledge applied to medicinal plant culture much of the success of the garden is due, to give me a statement suitable to embody in this paper, and much that follows is taken from the professor's statement, for which I wish to give him full credit.

With a sufficiently equipped medicinal plant garden at the disposal of the instructional force, the first year's work on the fundamental principles of morphology, plant physiology, ecology and systematic botany, can be carried on to a much greater degree of success to the pharmacy student by a study of medicinal plants rather than by the study of the ordinary house or ornamental plants. In these latter the student has little interest primarily because they are not directly associated with pharmacy and medicine.

The study of external morphology and systematic botany may be taken up early in the fall when abundant material is available for giving instruction pertaining to the different types of flowers, leaves, roots, etc. Our students work directly in the garden, observing, making notes and collecting material which is taken to the laboratory for drawings and additional notes.

By having the plants arranged in the garden as far as possible according to families, with the ascending and descending families adjoining, the characteristics of the more important families soon become impressed upon the students' minds and further systematic work is facilitated. Of course, this plan cannot always be carried out to complete satisfaction, because many plants of similar botanical characteristics require widely different cultural conditions. It is probably not necessary to name the specific plants most suitable for this arrangement, but

prominent positions in the garden and in the work should be given to the important medicinal plants belonging to the filicales, scrophularineae, solanaceae, ranunculaceae, umbelliferae, cruciferae, compositae, etc. A few plants representing the euphorbiaceae, cactaceae, araceae and other botanical groups of more or less medicinal importance are of value in giving students a broader conception of plant groups.

Attention may be given to plant physiology as soon as cold weather stops outside work. The plants can then be potted and taken in from the garden or grown in the plant laboratory. Sufficient of these can be provided so that individual students or small groups may work independently on respiration, transpi-



MEDICINAL PLANT GARDEN, COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA, LOOKING NORTH.

Showing (1) *Digitalis purpurea*, (2) *Gossypium herbaceum*, (3) *Aconitum spec.*, (4) *Delphinium consolida*, (5) *Carthamus tinctoria*, (6) *Digitalis purpurea rosen*, (7) *Datura meteloides*, (8) *Matricaria spec.*, (9) *Atropa Belladonna*.

ration, root-pressure, photo-synthesis, etc. For this work the following plants from our own garden have been used successfully: *Datura stramonium*, *eucalyptus globulus*, *cucurbita pepo*, *sinapis alba*, *scilla* and *atropa belladonna*. Many others might be used or substituted.

A sufficient number and variety of plants can be potted to supply histological material. This latter work may continue until spring.

The major work in pharmacognosy proper may be done during the second and

third years, but drugs from the cryptogams can be studied at the time the lower plant groups are taken up botanically. Our students work with plants yielding some of these latter drugs, such as aspidium.

The collecting, drying and preparing of a few drugs may be included in the first year's work.

For the advanced work in pharmacognosy it has seemed well here to adopt a plan which directs attention mainly to the more important plants and drugs during the past year. At least five plants of the annuals or biennials were available for each student, and of the perennials, such as rheum, spec., or of the shrubs, such as viburnum opulus, one plant sufficed for a number of students.



MEDICINAL PLANT GARDEN, COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA, NORTHEAST VIEW.

Showing (1) Hedge of *Rhamnus cathartica* and *Ricinus*, (2) *Conium maculatum*, (3) *Digitalis*, (4) *Brassica nigra* and *Sinapis alba*, (5) *Rheum spec.*, (6) *Cannabis gigantea*, (7) *Coriandrum sativum*, (8) *Capsicum spec.*, (9) *Calendula officinalis*, (10) *Datura meteloides*, (11) *Nicotina Tabacum*, (12) *Atropa Belladonna*.

Each student collected a quantity of the material representing the drug and potted one or more plants. He then took this material to his desk in the laboratory, where it was submitted to a rather thorough study, along with commercial samples of the drug supplied by the market. During the winter outside work was, of course, discontinued, and previously potted plants were used. This extended work on the important drugs covered quite fully the outline for the study of drugs as presented by Tschirch. The order of study naturally depends

upon the condition and development of the plants. During the past year the appended order followed here by Prof. Newcomb has proven very satisfactory:

1. Name of the drug—synonyms—etymology.
2. Name of the plant—synonyms—etymology.
3. Systematic position of the plant.
4. Systematic morphological description of the plant (drawings).
5. Occurrence and propagation of the plant.
6. (Event) Culture of the plant—effect of cultivation.
7. Production of the drug—collection and preparation.
8. Commercial channels.
9. Commercial varieties—methods of packing.
10. Description of the commercial drug, including a comparison with the material from the garden:
 - (a) Morphological description.
 - (b) Anatomical description.
 - (c) Odor and taste.
11. Admixture and adulteration.
12. Tests and valuation.
13. Similar or parallel drugs.
14. History (if time permits).
15. Review, consisting of a set of home-study questions.

The living plant specimens play a very important part throughout the whole study, serving to elucidate the various characteristics so that they are impressed upon the student as can be done in no other way. The drugs prepared by the students are preserved with the commercial samples in special pharmacognosy trays. Frequent sight identification tests are conducted, not only upon the drugs, but also upon the plants. Free use is made of charts, models, permanent slides, etc., as would be done without the garden.

During the last two springs, students took great interest in planting and watching the growth, among others, of *coriandrum*, *foeniculum*, *brassica*, *conium*, *datura*, *ricinus*, etc., and some of this work is required of each student. Field trips are a part of the required course, and on these occasions students collect and bring in to the garden various medicinal plants, where they are conserved for further study.

So great does the interest in the garden become that it is not uncommon to see many of the students voluntarily at work studying the plants or assisting with the care of the garden.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

CATAPLASM OF KAOLIN.

S. K. SASS, CHICAGO.

This preparation, much prescribed by physicians, and used extensively in some sections of the country, appears to many pharmacists too difficult to prepare on a small scale in the laboratory of a retail pharmacy.

The fact is, that Cataplasm of Kaolin can be prepared in your own laboratory without too much labor, and for about one-half the price you pay for it when buying from some manufacturing house at their lowest price.

Having eight years of practical experience in making it, I feel it is my duty to inform my fellow pharmacists of the knowledge resulting from this experience, and to give the simple mode by which Cataplasm of Kaolin is prepared in my store.

It may be interesting to mention how I gained this valuable knowledge. While clerking, I received a prescription one day calling for "Pasta Kaolin $\mathfrak{z}\text{vi}$." Having never heard of such a thing, I referred it to my principal, who directed me to weigh equal parts of Fuller's Earth and Petrolatum and then mix together. After about 45 minutes "Pasta Kaolin" was dispensed.

A few days later another such prescription came in, giving me a chance for a good sweat-bath on a Sunday night. But unfortunately the started exercise was interrupted by the appearance of the writer of the prescription, who informed me that "Pasta Kaolin" should be prepared from pure Kaolin and Glycerin, and that it is impossible to do this by hand, because herculean strength would be required to make a paste of proper consistency. He also said that he was not particular as to where, or by whom this "paste" was produced, and to dispense whichever we had on hand.

As the proprietor of this store did not permit any experimentation and waste of time, the long wished for opportunity to try my strength came when I was engaged to manage a little store owned by a physician, who used a considerable amount of that original "mud." My first experiment consisted of mixing in a mortar one pound of pure Kaolin and Glycerin, adding the Glycerin gradually to the proper consistency. After a short time I was convinced that without possessing herculean strength, I could produce satisfactory "Pasta Kaolin." At my first chance I presented my preparation, together with the formula according to which I prepared, to the doctor-proprietor and asked him to give it a fair trial.

The doctor informed me that I had omitted one important ingredient—Iodine. As I was doubtful about his claim, he attempted to prove to me that his state-

ment was correct, but the starch test failed to indicate any free Iodine present in the original product. Later I suggested the Nitric Acid and Chloroform test which did show traces of Iodine.

I promised the doctor that I would prepare "Pasta Kaolin" with Iodine, and I did. I started with three pounds of Kaolin. When the "Pasta" was finished, I added ten drops of Tr. of Iodine. The result was that ten drops of tincture was enough to give "Pasta Kaolin" a brownish tint. Taking an equal amount (5 gm.) of my preparation and of the one from Denver, I demonstrated to the doctor that mine contained about ten times as much free Iodine as the other preparation.

I will not go into detail of perfecting the process of manufacturing this preparation. I will only mention that my first apparatus consisted of a mortar, next, of a dishpan having a capacity of about four gallons and my fists, which served as mixers.

My formula for "Pasta Kaolin" was as follows:

Kaolin	1 lb.
Glycerin	fl. 5 xss.
Oil of peppermint	drops 2
Oil of wintergreen.....	drops 8
Carbolic acid, 95%.....	drops 12

This preparation never gave me any trouble in keeping, and two physicians prescribed it whenever there was an occasion for it, and claimed good results.

As soon as the new Pharmacopœia appeared, I started to compound the Kaolin preparation according to the formula and directions found therein. The first batch was disappointing, as swelling, which was taking place slowly for some time, was noticed right after the completion. The result made me think that reaction was taking place between Boric Acid and Glycerin, as this did not happen when Boric Acid was not used. Next time I started with a smaller amount, heating the glycerin and dissolving the Boric Acid in the warm glycerin. This showed that the swelling was not so rapid, and that it had diminished considerably. This result put me in the right direction.

But as I am taking too much of your valuable time, I will tell you briefly how to prepare Cataplasm of Kaolin in your laboratory.

Most of the utensils required you will find in your own store. Procure a large candy pail or something similar, fasten a piece of board about thirty-six inches long and ten to twelve inches wide to the bottom of it by hinges, hooks or otherwise, or fasten the pail to the floor. Order from a carpenter or prepare yourself a stick thirty inches long, or longer, the longer the better, and at least one inch thick. This done, you are ready to begin the work.

Kaolin should be free of moisture. To assure yourself that it is perfectly dry, heat as directed in the Pharmacopœia. The pail, too, must be thoroughly dry. Add the Boric Acid to the Glycerin and heat to about 150° C., remove from the fire and pour into the pail, add the Kaolin and stir until it becomes a smooth mass, free of lumps. Then dissolve the Thymol in the oils and mix well with the mass. Finally add enough Glycerin to bring the Cataplasm to the proper consistency and transfer to an air-tight container.

I find it necessary to add more Glycerin than the pharmacopœial formula calls for.

Time required for making 20,000 gms. is from 45 minutes to an hour. It will be to your advantage in every way to prepare Cataplasin of Kaolin in your own laboratory, without, as I said before, much labor and for about one-half the price you pay for it when buying from a manufacturing house.

DISCUSSION.

Mr. C. A. Mayo, of New York, inquired if an ordinary domestic bread-mixer would be suitable for this purpose.

Mr. Sass said he did not think it was strong enough.

He said it was hard work to mix the paste when he attempted to do it with his fist, because when he had his arm about ten or twelve inches in the paste, he couldn't pull it out. Then, too, it required another man to hold the pan down; whereas, by having this pail fastened to a board, he simply stood on the board and mixed it very easily with the long pestle described in this paper.

WHY DO DRUGGISTS RECEIVE SO FEW PRESCRIPTIONS?

Doctor Henry Beates, president of the Pennsylvania State Medical Examining Board, at a recent meeting of the Philadelphia Branch of the American Pharmaceutical Association gave an answer to this question which would have raised a storm of indignant protest had it come from a druggist. Doctor Beates plainly said that one reason why the druggist does not receive more prescriptions for galenical preparations is that physicians do not know how to formulate a prescription of the proper drugs in the proper combination best suited to the patient or the conditions of the case. Furthermore he asserted that few of the present day practitioners know the exact therapeutic action of drugs, that not one in ten could tell the difference in the effect produced by an infusion of digitalis made from a fluidextract and that produced by one made from the assayed leaf, giving this as an example of the results of the lamentable lack in the study of materia medica and in a positive knowledge of drugs. Strong language this, but, coming from one with long experience in examining candidates for licensure to practice medicine in his state, he must know.

One of the chief causes assigned for the decline in the prescribing of preparations the dispensing of which would require skill and learning on the part of the druggist was the insufficient teaching of materia medica in medical colleges, this subject usually being given in the first year and promptly forgotten in the succeeding years when all of the student's time is taken up with the refinements of diagnosis, pathology, bacteriology and other modern additions to the curriculum. The graduate, it was said, could diagnose a case in the most exact manner, but when he came to prescribe the proper drug or combination of drugs for it he was all at sea and in despair would prescribe something made by somebody which he remembered to have been told was the exact remedy required. And the worst part of the situation, in the speaker's opinion, was the fact that the prescriber not only did not know what he was prescribing, but did not even know how the remedy ordered acted upon the patient, except that he got better or got worse.—*American Druggist.*

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

THE U. S. P. AS A STEPPING STONE TO HIGHER IDEALS.

W. J. FRAZIER, WICHITA, KANSAS.

While I do not pose as a teacher of high ideals, it is my ardent desire, as a common druggist in the ranks, to lend to the advancement of the profession that I love, and to which I have endeavored to give the energies with which God has endowed me, the little influence at my command.

It will be observed at this meeting that the teachers of our schools of pharmacy are the leaders in this Association, as they should be, but it is a lamentable fact that not enough of the men behind the counters of the retail drug stores of the country are interesting themselves in the work of this Association; and for this reason, and not for any fitness I may possess to participate in this discussion today, I have accepted the invitation of the Chairman of your Committee on the United States Pharmacopœia to present a brief paper along any phase of the subject that concerns me most.

I have chosen the above subject as being self-explanatory, as well as affording an opportunity to make my remarks general. And, while there is nothing personal in what I have to say, it matters little to me where I may strike, if I can succeed in pointing out some of the defects which have crept into our profession, and in directing the thought of my colaborers to the U. S. P. as the means of removing such defects.

In my humble opinion, we are at the beginning of better days in pharmacy if we will but hold to the Pharmacopœia as our "rule and guide" for work, instead of shouting "ham sandwiches, hot tamales, oyster cocktails, post cards, postage stamps," and the many other things which degrade our high calling.

If we will but study the needs of the physician, and help him to see the advantage of familiarizing himself with the standard preparations of the U. S. P., and show by our manner of conducting business that we are not mere vendors of patent medicines, soda water, and sandwiches, but are men of his own class professionally, who have at heart the welfare of the sick the same as himself, our increase in prosperity will be both sure and speedy.

Now to show ourselves worthy of this confidence we must, first of all, see to it that the rule and guide by which we work is the very best standard that can be set up, then there can be no question as to our "ideal."

I believe that the U. S. P. could be improved by making some of its formulas more explicit. For example, take that of so simple a preparation as Essence of Peppermint. The average druggist will use the oil of peppermint which he

happens to have in stock, and which is often very inferior in quality; since the druggist when purchasing from his jobber frequently fails to insist upon being supplied with standard U. S. P. drugs only, and buys the cheapest grades offered.

It is true that the pharmacist should know that the oil to be used in the preparation mentioned should be in accordance with pharmacopœial requirements, but he does not stop to think. In this formula, the name of the oil should be followed by the legend "U. S. P." which would cause the conscientious pharmacist to study the label on the container to ascertain whether or not the article was up to the standard. This precautionary method should be used in every formula where there is a possibility of such oversight.

Another example is found in Tannic Acid, which title we believe should always be followed by "U. S. P." in any formula where it occurs. The writer once had an experience in trying to get a good U. S. P. tannin for prescription work. To my amazement neither of the wholesale houses of whom I was accustomed to buy had a pound of it in stock, and when our demands were persistent, they ordered it specially for us. On making investigation, we found that they always sent out the cheaper grades of this article to meet the demands of druggists for low prices.

No man ever attained a very high plane who loafed on his job. That retail druggists all over the country have been doing this goes without saying, and it is demonstrated by the fact that on the shelves of retailers may be found hundreds of dollars worth of pharmaceutical specialties which, in most cases, can be made by the retailer himself after the formulas in the U. S. P. and N. F.

It behooves us, if we are to make our calling successful, and our Pharmacopœia a useful book, to stop loafing, stop going after strange gods in things foreign to our profession, and prove ourselves worthy members of the craft. Then, and not till then, can we compel the pharmaceutical manufacturing houses, who are sapping our vitality both professionally and financially, to "sit up and take notice."

I realize, however, that the pharmaceutical manufacturers may be a useful adjunct to our profession, and can do much for us if they will treat us fairly and stop going into the patent medicine business and promulgating their patents through the physicians. This would give us a great incentive to use the Pharmacopœia faithfully, and strive to improve it in every way possible, so that the volume would grow steadily into that popularity of which it is so deserving.

The writer believes that a more exhaustive description of the properties and medicinal uses of all drugs and formulas in the Pharmacopœia would popularize it immediately, and would lead to a more frequent use of the book among druggists generally. Also, that the publication of these formulas in any other than the official manner should be prohibited, after they are adopted by the Committee of Revision. While it is true that this would make the U. S. P. very much larger and more expensive, it would greatly lessen the demand for other books containing non-official substances and formulas.

We believe, also, that it would make the book more popular with physicians if shorter names were adopted for chemical substances having titles which almost cover a page of a prescription blank, such as "hexamethylenamine tetramine." It would facilitate their being remembered by physicians and many who use thi

particular chemical under trade names could soon be induced to employ the official title if it were short, but they do not care to use such needlessly long and difficult names.

Our pharmaceutical manufacturing friends have long realized the importance of this, and are putting out this same chemical under the trade names, "amino-form, cystogen, formin, urotropin," etc., and in many instances are getting not only fancy but fabulous prices for them.

ORIGIN OF SOME WELL-KNOWN MEDICINES.

Dover's powder, introduced into the "British Pharmacopœia" in 1748, was the result of the work of Thomas Dover, who was born in 1668; studied under Sydenham; practiced in Bristol in 1684. During the year of 1708, when Thomas Dover was captaining a privateer expedition, he landed in Peru, and following this his seamen became afflicted with the plague. Together, with four surgeons, he treated 180 seamen by bleeding each man 100 ounces and by using the powder. In 1742, after he had returned to London, he brought out this powder for gout, and it was called by him diaphoretic powder.

"Fowler's Solution," introduced by Tom Fowler, an apothecary, in Yorkshire, England. A proprietary medicine, named "Tasteless Ague and Fever Drops," was quite popular at that time, so Fowler analyzed it and found arsenic in it. He worked out the formula, added spirit of lavender and called the resulting preparation Fowler's Solution.

Laudanum was a name invented by Paracelsus in 1500, who applied it to an aqueous extract of poppy, which he gave in five-grain doses. Sydenham first introduced liquid laudanum, acetum opii, which continues today as the laudanum of the continent. The word paregoric was first used as an adjective, meaning to speak words of comfort, and was first used to describe an elixir. Lemort, a Leyden chemist, brought forth paregoric elixir early in the eighteenth century. Many of the older Greek and Latin physicians had paregoric elixirs.

One of the oldest known combinations is that of Hiera Picra, sometimes referred to as Hickera Pickera, or Hickory Pickory.

Hiera was applied to prescriptions in early Grecian medicine, and these contained either aloes or scammony, or both. Each physician had his own particular Hiera; Galen's consisted of aloes. The pill of aloes and myrrh was first introduced as Rufus Hiera.

Friar's Balsam, introduced by Fridasor, a friar, first consisted of Balsam of Peru, later benzoin was substituted.

Blaud's pill, introduced by a Frenchman in 1841, consisted of iron sulphate and potassium carbonate.

Citrine ointment made its debut in 1650, and at that time consisted of lead and grease. In 1722 mercury was dissolved in nitric acid and mixed with lard. A Yorkshire physician was responsible for this.

Diachylon, meaning a precipitation of juices, was of importance, from a medico-legal viewpoint, in England, where it was used by the ignorant class to produce abortion. This ointment dates back to the time of Tiberius.—*The Jeffersonian*.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

EARLY HISTORY OF THE COLORADO PHARMACAL ASSOCIATION.*

CHARLES J. CLAYTON, DENVER, COLO.

First of all, I will say there never was any such association as the Colorado Pharmaceutical Association. Our Association was organized in 1890 under the name of the Colorado State Pharmacal Association. I can't tell you why "pharmacal" was chosen rather than "pharmaceutical," although I remember I heard Mr. Ford argue that point in the organization meeting when they were deciding what name it should be called by. A few years later when a new Constitution and body of By-Laws were adopted, the word "State" was dropped, and it has been known for the last thirteen or fourteen years as the Colorado Pharmacal Association. It was organized in 1890. It is therefore 22 years old, and has held a meeting every year with one exception, the year 1904; during the St. Louis Exposition there was so much talk among druggists of their intention to attend that exposition, that the Executive Committee of the State Association came to the conclusion that it would not be worth while to attempt to hold a meeting that year. So there was a meeting of the Executive Committee and the officers were permitted to hold over until the next year. In that way I happened to be one of the few men who have held office as President of the Colorado Pharmacal Association for two years.

Mr. Charles M. Ford was the first President, as he was also the most active one among those who organized the Association; he held the office for two years and was again elected to that office in 1907, when the Association affairs were at low ebb and it seemed as if we had to get some new blood in to stimulate matters and bring it on its feet again.

I can recall, in thinking about it in these few minutes, the names of practically all the Presidents of the Association, but I think their names would not be familiar to you as a general thing. Among them, however, is that of Mr. E. L. Scholtz, who held the office of President two successive years. Among the other presidents have been Mr. McKenzie, whom most of you probably have met; Mr. Arcularius, of Colorado Springs; and Mr. E. G. Fine, of Boulder, who is the present presiding officer.

The first Secretary of the Association was Felix Lyneman, a graduate of the Philadelphia College of Pharmacy, who with other members of the alumni of that college, was very active in the formation of the Association. Mr. Lyn-

*Condensed from the stenographic report of Mr. Clayton's oral address.

man held the office until his death, which occurred some time about 1896, and was succeeded by Mr. Charles E. Ward, who was accustomed to attend the meetings of the American Pharmaceutical Association during the latter years of his life. Mr. Ward died about the first of November, 1906, and I was appointed by the Executive Committee to fill out his unexpired term, and held the office only until the next annual meeting of the Association, being succeeded then by Mr. A. G. Clarke, who, before he received the records of the office, met his death in an accident, and his term was finished by Mr. Frank B. Angell.

All of those whose names I have mentioned as Secretaries were Denver men. Mr. Angell was succeeded by Mr. J. C. Anderson, then of Denver, but now of Fort Morgan, who held the office for one year, and Mr. Anderson was succeeded by Mr. Frank M. Hall, also of Denver, and now deceased. I assumed the office of Secretary two years ago, in 1910, and am told that I assumed it permanently, but I have not yet given my assent to that proposition.

During the history of the Association, 22 years, we have had but four Treasurers, Mr. J. F. Fezer, who held the office for 14 years, from the time of its organization until 1904. Mr. Fezer is located at Greeley, and is still in the drug business there. Mr. S. L. Bresler held the office two years, from 1904 to 1906. Mr. S. B. Sturtevant, of Grand Junction, who was Treasurer for one year, and Mr. H. Reynolds, of Greeley, who has been Treasurer since 1907.

In connection with my remarks concerning the State Association, I might say that the Denver Pharmaceutical Association was organized some time previous to the organization of the State Association.

Until recent years, Colorado has never been very active in the American Pharmaceutical Association affairs, but if you gentlemen will notice the map that hangs in the office of the General Committee down on the first floor, you will observe that at the present time, in proportion to population, Colorado leads the United States in membership in the American Pharmaceutical Association. If you haven't all observed that map, I think you will find it interesting to look at it; Mr. Nitardy has prepared it, showing the relation of members of the American Pharmaceutical Association in the different states, to the population of those states, and Colorado leads in that percentage; California and South Dakota are in the second class and are away ahead of some of the Eastern states, and I want at this time to give full credit for Colorado's standing in the American Pharmaceutical Association to Mr. Nitardy, who has been very active since coming here, and who has personally secured the great majority of applications for membership in the Association, and was the instigator of the organization of the Denver Branch, which has now been organized some three years.

It would be very difficult, if not impossible, ever to compile a history of the Colorado Pharmacal Association that would be at all complete, for the reason that the records of the earlier years of its history, were lost in a fire that destroyed the Secretary's office, and no one has preserved the printed minutes of the meetings.

Had I known that I was to be called upon for something of this sort, I could have gotten up something more complete than I have presented you, and perhaps made it somewhat worth while hearing, and I should like to have an opportunity of doing that some time in the future.

Contributed and Selected

THE PHYSIOLOGICAL ASSAY OF ACONITE.

GEORGE B. ROTH, ANN ARBOR, MICH.

The variability of aconite preparations when tested physiologically has shown that the chemical method of assay which is required by the U. S. P., VIII, for *Aconitum Napellus*, is not a measure of its activity. A preparation relatively rich in total alkaloids may have a low toxicity and vice versa. Other chemical methods than the official ones, which have been recommended have upon investigation been found to be equally unreliable. For this reason a search was made for a physiological test which might be used to determine the activity of aconite.

Before the consideration of any method of assay a brief review of the chemistry and pharmacology of aconite will be given to enable one to more properly value the various assay methods that will be mentioned and discussed in this paper.

For a long time the chemistry of aconite was in dispute on account of the fact that mixtures of alkaloids rather than pure principles were isolated from the plant.

Although an amorphous alkaloid had been isolated from the leaves of *Aconitum Napellus* by Geiger¹ in 1833, it was not until a half century later that its chemistry became better known, the especial credit for which may be given to Wright² and Dunstan.³

Dunstan³ described three alkaloids in aconite,* namely, aconitine, benzaconine and aconine. These have all been found in the root in varying amounts. According to Dunstan their constitution is as follows:

Aconitine (acetylbenzaconine), $C_{24}H_{37} (CH_3CO) (C_6H_5CO) NO_{10}$.

Benzaconine, $C_{24}H_{38} (C_6H_5CO) NO_{10}$.

Aconine, $C_{24}H_{39}NO_{10}$.

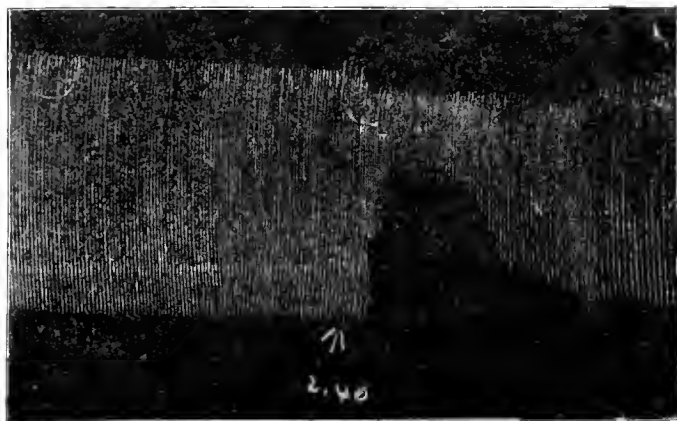
The activity of aconite depends mainly upon its most active alkaloid aconitine. This is a crystalline base which melts at about 188° C., is very sparingly soluble in water but readily soluble in alcohol. When heated to its melting point the alkaloid decomposes first into benzaconine and later into aconine. Benzaconine the product of the first stage of aconitine hydrolysis, is the chief constituent of the substances named napelline and pieraconitine by the older workers. Dunstan first named it isaconitine. Benzaconine is an amorphous base, and like aconitine is very sparingly soluble in water but readily soluble in alcohol. Aconine is also an amorphous base, but is soluble in both water and alcohol. Although these alkaloids are present in the crude drug they may be present also in the

*By aconite is meant the official preparations made from the root of *Aconitum Napellus*.

galenicals as decomposition products. Dunstan and Unney⁴ found aconite alkaloids remarkable in that they undergo decomposition easily, especially hydrolysis.

Besides these alkaloids there is considerable aconitic acid, a small amount of starch, some resin, fat, and sugar.

Aconitine, according to Cash,⁵ is the most active of the alkaloids. Either to the frog (*Rana temporaria*) or the guinea pig, it is almost 200 times more toxic than benzaconine and about 1200 times as toxic as aconine. Upon the heart and circulation aconitine produces marked effects. In warm-blooded animals the heart is first slowed, due to a stimulation of the vagus center, and this slowing is accompanied by a great fall in blood pressure. The heart rate then increases and later becomes irregular with the development of a marked arrhythmia between auricles and ventricles, the blood pressure fluctuating greatly.



Tracing of isolated frog's heart perfused with Aconitine hydrochloride.
At 2:35 p. m. Merck's Aconitine hydrochloride (1-400,000) was turned on. At 2:40 p. m. increased tonus appeared.

When applied to the tongue and mouth in dilute solutions it will produce the tingling sensation which is so characteristic of aconite.

Benzaconine in small doses causes a very slight rise in the blood pressure, and an acceleration of the heart rate, whereas with large doses a steady fall in the blood pressure occurs which is accompanied by a decrease in the heart rate. There is also developed a change in rhythm between the auricles and ventricles. No tingling is produced when applied to the tongue.

Aconine as compared with the former alkaloids is comparatively harmless. A slight rise in pressure usually occurs which is due to a more complete systole of the heart. In this respect it is antagonistic to aconitine and benzaconine. Like the latter, it does not produce tingling.

Methods of Assay Investigated. An investigation of seven methods was made: the lethal dose for frogs, one-hour frog method, the effect upon the blood pressure of the cat and the dog, the Squibb method, the reaction upon the perfused isolated frog's heart, and the lethal dose for guinea pigs.

Although frogs are so easy to obtain and handle they have never been extensively used in a method for the physiological assay of aconite. Some work has been done with this drug upon frogs by Mandelin,⁶ Stevens,⁷ and a few others, with unsatisfactory results. Buntzen and Madsen⁸ used them to determine the toxicity of various aconitines.

In the lethal dose method for frogs the amount of drug necessary to kill a frog of known weight is determined. This is essentially the method as used by Houghton⁹ for the assay of digitalis. The aconite preparation is deprived of its alcohol by gentle heat, and then diluted with physiological salt solution so as to measure between 0.5 cc. to 1.0 cc., and then injected into the abdominal lymph sac. The frogs are injected in the latter part of the afternoon, placed under moist bell jars and allowed to remain until the next morning, when they are examined. It was usually found that when an animal was dead the body was rigid, but this was not necessarily true. The heart was examined and if stopped this was taken as an end reaction. The ventricle was usually found in systole and the auricles dilated.

This method of assay yielded very satisfactory results with some preparations, but with others very discordant results were obtained. Under these conditions it required from 0.0004 cc. to 0.004 cc. per gram of body weight of the official fluidextract to kill; 0.003 cc. to 0.004 cc. per gram of body weight, of the unofficial fluidextract of the leaves; and about 0.007 cc. per gram of body weight, of the official tincture. While in a general way this method shows the relative strengths of different preparations, it is very uncertain, inasmuch as there is a marked variation occurring in each series of animals. As an illustration, the assays of preparation "F", an official tincture, and preparation "C", an unofficial fluidextract of the leaves, will be given in full. Those marked (+) were found with the heart stopped, while the heart was beating, with those marked (—).

PREPARATION "F".
Dose (cc. per gram of body weight).

0.003 —
0.004 —
0.004 —
0.005 —
0.005 —
0.0055 —
0.006 +
0.006 +
0.006 +
0.0065 +
0.007 —
0.007 —
0.008 —
0.008 —
0.009 +
0.01 +

PREPARATION "C".
Dose (cc. per gram of body weight).

0.001 —
0.002 —
0.003 —
0.004 —
0.005 +
0.005 —
0.006 —
0.006 —
0.007 +
0.008 +
0.009 —

Preparation "C" shows a degree of uniformity in the results, but the fact that the heart was beating in the animal which received the largest dose and had stopped in the animals receiving smaller doses, makes the results more of a conjecture than a fact. The solutions injected were always quite dark and con-

tained considerable resinous material, traces of which could always be found in the lymph sac when examined at the end of the time.

In general, this method yielded more promising results than did the one-hour method, and although not strictly accurate for quantitative work, yet it shows gross differences in the activity of aconite preparations.

The one-hour frog method is a heart toxic method, and is also used in the assay of digitalis. The method in detail can be found in the work of Famulener and Lyons,¹⁰ but a short description of it will be given. As in the lethal frog method, the diluted non-alcoholic drug is injected into the abdominal lymph sac and at the end of an hour the animal is pithed and the heart is exposed and examined. No definite end reaction except cardiac standstill was required, as the heart would be found in systole in many of the animals and in diastole in many others, the latter condition predominating in a given series. The stoppage of the ventricle alone could not be taken as an end reaction, as contractions supervened occasionally in the ventricle if the auricles were beating vigorously. The beat of the sinus, however, was disregarded. A large number of animals were used, but no constant results were obtained. The following series is typical for all the preparations used:

PREPARATION "X" (an official fluidextract.)

Dose (cc. per gm. of body weight.)

(+)=heart stopped.	(-)=heart beats.
0.02 —	0.05 +
0.02 —	0.05 +
0.02 —	0.05 —
0.025—	0.05 —
0.03 —	0.05 —
0.03 +	0.06 +
0.03 —	0.06 +
0.03 —	0.06 —
0.03 —	0.06 —
0.03 —	0.07 —
0.03 —	0.07 +
0.04 +	0.07 +
0.04 —	0.07 +
0.04 —	0.09 +

Further work on this preparation had to be discontinued because of the fact that the solution was too concentrated to be absorbed properly in the time limit. For example, a 30 gm. frog which received the largest dose was given 0.27 cc. of the modified fluidextract.

If we compare this method with the lethal frog method we find that it is more unsatisfactory in many ways. The absorption is more variable, there is a less definite increase in toxicity with the increase in the size of the dose, and larger doses are required than in the lethal frog method.

One of the effects of aconite is the production of a lowered blood pressure. This fact, therefore, was investigated, with the thought in mind of its being useful as a method of assay. After sufficient trial it was found that the effect upon the blood pressure could not be used as a measure of the activity of aconite, the chief objection to it being the relatively high toxicity of the drug. The experiments were performed on both dogs and cats. The animals were anaesthetized with morphine and chloretone and were given artificial respiration.

The drug was injected into the jugular vein, the rate of injection being uniform and slow and the amount of fluid injected being constant. As an illustration of the toxicity of the drug the following protocol will be cited. In a dog with intact vagi 0.25 cc. of tincture produced only a slight fall in the blood pressure. In a few minutes marked cardiac irregularities occurred, followed by a continued fall in pressure. In order to prevent the pressure from falling further the vagi were cut, which caused the heart irregularities to disappear. About fifteen minutes later a dose of 0.5 cc. was given, which caused a slight fall in pressure but no heart irregularities. This same amount was repeated after about ten minutes, producing a marked rise in pressure, followed by irregularities and a subsequent fall in pressure. After another interim of about ten minutes another 0.5 cc. dose was given, which caused the death of the animal, death being caused by a total of 1.75 cc. of the tincture given at intervals extending over a period of about forty-five minutes. Like results were obtained in the cat, a large animal being able to survive as large amounts of the drug as did the dog. With either intact or cut vagi no constancy in the fall or rise in pressure was observed, and the conclusion was reached that this method was altogether inadequate.

When the isolated heart of the frog (*Rana pipiens*) is perfused with aconitine in Ringer's solution, in certain dilutions, the organ responds first by going into what might be considered a state of incomplete tetanus with a marked increase in tonus (see Fig.) Relaxation of the heart gradually becomes lessened and the systole more complete or while the organ is in a state of marked tonus no regular beat occurs but a series of irregular contractions may pass from one side to the other. It was thought that solutions might be compared quantitatively by noting the dilution just necessary to produce this phenomenon, or perhaps a comparison might be made by noting the time required to cause this effect when using the same degree of dilution of unlike preparations.

The method is as follows: A large frog is selected and after exposing the heart an inflow cannula is inserted into the left anterior caval vein and tied firmly, and in a similar manner an outflow cannula is tied into the right branch of the truncus arteriosus. After tying all the remaining vessels and freeing the organ, the cannulae are then fixed securely with an iron clamp. A small spring clamp is then attached to the tip of the ventricle and tied to a Harvard heart lever, thus enabling one to obtain a tracing. The inflow cannula is then connected to a set of perfusion bottles which are placed at a height of about 80 mm.

The fluid passing through the outflow cannula is made to pass over the heart so that the organ is kept moist. The outflow cannula is about 30 mm. long and is held nearly upright, which gives the heart a constant amount of work. Inasmuch as each heart will permit of a single experiment, thus necessitating the use of a number of animals, it is quite essential that the technic be uniform. After the Ringer's solution* is turned on, the heart should beat at about the same rate as in the pithed animal.

In the following experiments Merck's aconitine hydrochloride was used.

* Ringer's Solution: NaCl — 0.6%
 CaCl_2 — 0.02%
 KCl — 0.0125%

Various dilutions were tested and after several trials for each dilution an average was made. The results are as tabulated below:

Dilution	Number of experiments performed	Time elapsing before appearance of increased tonus.	Average
1-200,000.....	4	6, 5, 4, 3 minutes	4.5 minutes
1-400,000.....	6	6, 10, 6, 5, 6, 5 minutes	6.3 minutes
1-600,000.....	6	9, 13, 23, 10, 14, 11 minutes	13.3 minutes
1-800,000.....	6	19, 7, 14, 18, 15, 16 minutes	14.8 minutes
1-900,000.....	2	23, 26 minutes	24.5 minutes

For an official tincture in 1 to 50 dilution an average of 11.6 minutes was required to produce increased tonus. With an official fluidextract in 1 to 500 dilution no typical reaction appeared, only a change in rhythm which occurred in 6 or 7 minutes. Further work with galenicals showed that not only the characteristic reaction did not appear with many preparations, but that the time for its appearance in case it did occur, showed greater variability than it did with aconitine. This may be due to the resins and other substances present in the galenicals as well as to the mixture of alkaloids.

The dilution necessary to produce this reaction was ascertained with Merck's aconitine hydrochloride and it was found to occur in as great a dilution as 1 in 2,000,000, during the months of October, November, and December, whereas it was obtained with considerable difficulty using a 1 to 800,000 dilution during the months of January, February and March. No sharp limit, as regards strength of solution, for the disappearance of this phenomenon could be determined.

This method might be useful to determine the activity of aconitines but is worthless for galenicals since the reaction is not constant when they are used.

Several decades ago Squibb¹¹ recommended a physiological test for the determination of the strength of aconite preparations, his endeavor being to secure some means whereby a good preparation might be known from a worthless one. At first he employed this merely as a qualitative test, but later he used it to determine the relative worth of various preparations.

This test takes for its end reaction the sensation produced on the tongue and mucous membranes of the mouth after allowing liquid preparations of the drug to remain in the mouth for a short period of time, and ascertains the dilution which is just necessary to give a distinct aconite sensation. The mouth is rinsed with distilled water, and four cubic centimeters of the required dilution, which has stood for an hour, is placed in the anterior part of the mouth and retained for one minute. After several minutes a distinct aconite impression is obtained, which, according to the test, should not amount to tingling, but should be very suggestive of it. This sensation should continue for about half an hour. As originally suggested, a fresh official fluidextract should produce the reaction in a 1 to 600 dilution.

This is perhaps the oldest physiological test for aconite and it has been investigated by a number of workers, many of whom have found it an admirable test for the quantitative estimation of the aconite preparations. In fact, it is used today by at least three drug manufacturers in conjunction with the chemical

method required by the Pharmacopoeia. What makes the method especially commendable is its simplicity, as it requires no expensive laboratory, and furthermore it can be carried out by almost any one. Lower dilutions were obtained than were supposed to be found. For example, an official fluidextract produced tingling in 1 to 375 dilution. This may have been due to the fact that distinct tingling was always required in my tests. The results of the tests will be given later.

The guinea pig test recommended by the Philadelphia Branch of the American Pharmaceutical Association¹² was given an extensive trial and yielded very satisfactory results. It is a lethal dose method and requires the determination of the minimum amount necessary to produce the death of a guinea pig within twelve hours, the dose injected being estimated per gram of body weight. This test was found to be especially delicate, the minimum lethal dose of an official fluidextract being about 0.00004 cc. per gram of body weight. It will be noticed that this amount is one-tenth of that designated in the report mentioned above.

The limits of toxicity are comparatively narrow, as will be seen from the assays below.

PREPARATION "B" (Tincture)
 (+) = dead
 (—) = alive
 Dose (cc. per gm. of body weight.)
 0.0003 —
 0.00035 —
 0.00036 —
 0.00037 +
 0.00039 +
 0.0004 +
 0.0005 +

PREPARATION "C" (Fluidextract.)
 (+) = dead
 (—) = alive
 Dose (cc. per gm. of body weight.)
 0.00003 —
 0.00004 —
 0.00006 —
 0.00008 —
 0.0001 —
 0.00012 —
 0.00014 —
 0.00015 —
 0.00016 +
 0.00018 +
 0.0002 +
 0.00025 +

Before the further consideration of this method I shall give the results of the examination of eight samples by the three most satisfactory methods the lethal frog method, the lethal guinea pig method, and the Squibb method. The results appear in tabulated form below and are arranged according to the strength of the preparation examined, regardless of the actual ratio* which should exist between a tincture and a fluidextract.

Preparation	Lethal Frog Method		Squibb Method		Lethal Guinea Pig Method	
	Cc. per Gm.	Ratio	Dilution	Ratio	Cc. per Gm.	Ratio
A—Fluidext. Leaves.....	0.007	1	1-50	1	0.0005	1
B—Tincture	?	?	1-60	1.2	0.00037	1.3
C—Fluidextract	0.004	1.75	1-150	3	0.00016	3.1
D—Fluidext. Leaves.....	?	?	1-175	3.5	0.00009	5.5
E—Fluidext. Leaves.....	0.003	2.3	1-225	4.5	0.00009	5.5
F—Fluidextract	0.0004	17.5	1-350	7	0.00004	12.5
G—Fluidextract	?	?	1-375	7.5	0.000035	14.3
	Gm. per gm.				Gm. per gm.	
H—Merck's aconitine.....	0.00000165	4242	1-225,000	4500	0.000000123	4065

* This could be found by dividing the ratio for the fluidextract by ten.

From this table the inadequacy of the lethal frog method is seen and a degree of parallelism is noticed between the Squibb method and the lethal guinea pig method, the latter showing a higher ratio except in the case of aconitine.

In summarizing this work, we must conclude that of the methods investigated the Squibb and the lethal guinea pig methods alone can be used with any degree of accuracy. The frog methods are undoubtedly worthless. Theoretically, a blood pressure method would be equally worthless, since we know that aconite contains alkaloids which have antagonistic effects on the circulation. Practically the inefficiency of such a method has been demonstrated in this investigation. The perfusion method is seen to be much more delicate than any other for aconitine, but can not be used with success with galenicals on account of the fact that they contain all three alkaloids which have dissimilar heart effects. The relative activity of aconitines, however, could be measured by the perfusion method, using a similar dilution of unlike preparations.

Many criticisms have been urged against the Squibb method, the subjective factor being regarded as detrimental. This we believe is an objection, since we found that our results were so much lower than those of other observers. However, if the individual is standardized against a good preparation, the test can be used, and we believe it is a measure of the activity of aconite, since the tingling is produced only by the aconitine and not by the other alkaloids in the drug. The guinea pig method is the most delicate toxic method investigated and showed little or no variability. The relative non-toxicity of the aconines in aconite and the parallelism noticed between the Squibb and the guinea pig method would indicate that the latter method is practically a measure of the aconitine content in aconite. The variability in the reaction of individuals to the Squibb test would lead us to conclude that the guinea pig method should be preferred as a method of biological assay.

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FROM THE LABORATORY OF PHARMACOLOGY, UNIVERSITY OF MICHIGAN.

DEOLEATED TINCTURE OF STROPHANTHUS.

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The U. S. P. Tincture of *Strophanthus* has long been a source of trouble to the pharmacist and manufacturer, inasmuch as the fixed oil, contained in the *Kombe* seeds, persists in clouding the preparation after standing a short time, or immediately upon chilling. Considerable difficulty is experienced before the tincture is fit for dispensing, repeated filtration being necessary in order to produce a clear tincture; this operation being necessary each time before filling a prescription.

The clinician's principal objections to the Tincture of *Strophanthus* are, that its nauseating properties, although less than those of the tincture of *digitalis*, produce untoward effects, and that oftentimes the preparation fails to give results.

Before the introduction of biological assay, the tincture varied from 40 to 400 percent; it can readily be seen at what point the source of unreliability lies.

Shoemaker¹ says: "With wider and more rapid dissemination of knowledge, we may hope that within a comparatively few years, we may have *Strophanthus* used as carefully as *digitalis* today." The modern methods of physiological standardization make it possible for Dr. Shoemaker's hope to become realized. The tincture of *strophanthus*, when standardized by modern biological assay, is an absolutely reliable preparation, which does not deteriorate. The pharmacist may replenish his stock and fill his prescriptions with a tincture invariably 100 percent active.

Therefore, we have the unreliability of Tincture of *Strophanthus* overcome by the introduction of biological assay. Now, if it is possible to do away with the nauseating and irritating properties, we have a preparation most desirable. Suspicion points to the fixed oil, the troublesome element, which makes the U. S. P. tincture an unsightly preparation and causes the pharmacist much inconvenience. Although it has been proven that the active principles possess certain irritating properties, it has been my purpose to prove that the fixed oil is a disturbing factor of considerable note. With this purpose in view, a series of experiments were carried out in this laboratory.

First. A U. S. P. tincture was prepared, the first percolate of about 800 cc. produced a clear alcoholic liquid, the percolate then clouded, and remained turbid in spite of repeated filtration. When the tincture was tested physiologically, it proved to possess a relative strength of 60 percent. (This particular shipment chancing to be an inferior grade of drug.)

Second. A 10 percent tincture was prepared after first completely extracting the fixed oil with petroleum ether and percolating the deoleated drug with the U. S. P. alcoholic menstruum. A crystal clear tincture resulted, which remained clear after standing several weeks and after cooling to 0° C. The tincture, when tested physiologically, possessed a relative activity of 60 percent, proving that no loss in strength was suffered by the process of benzine extraction. Several

¹ *Materia Medica and Therapeutics.*

duplicate experiments were carried out, each of which checked the above results precisely.

The oil extracted from the seed was dark brownish green in color and amounted to 34 percent of the drug.

It possessed the following constants:

Sp. gr. at 25° C.....	0.9018
Acid number.....	19.44
Sapon. number.....	187.52
Iodine number.....	95.63

Chemically pure petroleum ether was used in the extraction of the oil, thereby eliminating a possible chance of error due to dissolved impurities.

The National Standard Dispensatory assigns the following constants to the oil:

Sp. gr. at 25° C.....	0.9249
Acid number.....	24.3
Sapon. number.....	194.6
Iodine number.....	101.6

No reference to the pharmacological action of the oil could be found.

The pharmacological properties of the oil were investigated, with the following results:

Twenty minims of the oil injected subcutaneously in a dog 5 kgm. in weight, produced no effect other than marked local irritation, which was very severe, the effect passing off after two hours.

Thirty minims of the oil, injected subcutaneously, produced severe local irritation.

Twenty minims of the oil were administered per os to a dog 5 kgm. in weight. The animal became very uneasy after 10 minutes, and was readily excitable. Judging from the behavior of the animal, there was severe pain in the region of the abdomen. The animal completely recovered from the effects after one hour.

Thirty minims of the oil were administered per os to a dog 5 kgm. in weight. The stage of uneasiness and excitability followed by emesis, which was very pronounced, and occurred one-half hour after injection. The animal then showed signs of depression, and fully recovered after three hours. The experiment was repeated several times, using several dogs while food was present in the stomach, and while the stomach was empty; always with the same results.

Smaller doses of the oil were given, varying from 5 to 15 minims, and invariably produced symptoms of gastro-intestinal disturbances varying with the amount of the dose. Vomiting, however, is not produced with doses smaller than 30 minims in a small dog.

It was deemed advisable to supplement the experiments by clinical observation, before arriving at conclusions. The tinctures (U. S. P. and deoleated), were concentrated to bring the preparation up to the standard adopted by this firm, and were then mailed to several physicians with instructions regarding the purpose of the experiment, etc. The tinctures were given, alternating, to patients taking the tincture regularly, and in all cases the deoleated tincture was preferred by the patient. The doctors reporting that the deoleated tincture undoubtedly possessed less irritating properties, and in every way was a more desirable

preparation. It is, therefore, hoped that the decolated tincture of strophanthus will be made an official preparation to replace the tincture of the U. S. P. VIII.

In the estimation of the author, tincture of strophanthus is to be preferred to the tincture of digitalis, which is generally supposed to undergo rapid deterioration. This belief, however, was strongly disputed by Hatcher & Eggleston², but there are many facts yet to be established before such a radical view can be accepted.

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ON CRYSTALLINE KOMBE'-STROPHANTHIN.

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(Continued from page 618.)

Properties of strophanthidin. Under the magnifying glass strophanthidin shows the same shape of crystals as shown in the picture of strophanthidin given by Feist. It contains one molecule of water of crystallization. Feist had trouble in drying the substance and it was only by obtaining crystals of a methyl alcohol containing strophanthidin, which gave off readily the methyl alcohol at 100° C. that he could establish the formula for dry strophanthidin. Feist, and also Heffter and Sachs, did not dry in a heated vacuum, but only at ordinary pressure. By drying in vacuo at 110-115°, we could readily obtain crystalline water-free strophanthidin. Also at lower temperature (105° in vacuo) the water is given off, but slowly. In moist air the water is taken up again. Found: 3.56%, 3.50% and 3.02% calculated for $C_{27}H_{38}O_7 + H_2O$: 3.66% H_2O .

Melting point. Strophanthidin melts at about 120°C in its water of crystallization to a turbid mass and melts at about 170°C. The dried substance melts as Feist describes at 169°-170°C, foaming at 180°C, it becomes solid by cooling and then melts at 232°.

Specific rotation. 1.008 gm. air dry strophanthidin (from crystalline strophanthin) was dissolved in 25 cc. methyl alcohol.

$$\begin{array}{ll} (a) & l = 2 \\ D = \frac{100\alpha}{lc} = +44.26 & \alpha = +3.57^\circ \end{array}$$

0.3300 gm. air dry strophanthidin (from amorph. acid strophanthin) was dissolved in 25 cc. methylalcohol.

$$\begin{array}{ll} (a) & l = 2 \\ D = \frac{100\alpha}{lc} = +44.26 & \alpha = +1.17^\circ \end{array}$$

Feist found for 0.5043 gm. strophanthidin dissolved in 25 cc. methyl alcohol

$$(a) \quad D = +45.45$$

² Paper read before April meeting New York Branch of A. Ph. A.

Combustion.

I. 0.2196 gm. air dry strophanthidin (from cryst. strophanthin) gave 0.1598 gm. H_2O and 0.5300 gm. CO_2 .

A second combustion was made of air dry strophanthidin (from cryst. strophanthin trade) which was not purified by recrystallization from alcohol, but was used as it is obtained in splitting the crystalline strophanthin according to Kohn and Kulisch.

After having been thoroughly washed with water it was dried in air.

II. 0.2198 gm. air dry strophanthidin (not recrystallized) gave 0.1660 gm. H_2O and 0.5312 gm. CO_2 .

or in percent:

	I	II	Calc. f. $C_{27}H_{38}O_7 + H_2O$
C	65.82	65.91	65.80
H	8.16	8.46	8.20

Thus it is apparent that recrystallization does not alter the constitution.

III. 0.2054 gm. strophanthidin (from cryst. strophanthin) dried at 110-115° in vacuo gave 0.1499 gm. H_2O and 0.5164 gm. CO_2 .

IV. 0.2330 gm. strophanthidin (from amorph. acid strophanthin) dried at 110-115° in vacuo gave 0.1770 gm. H_2O and 0.5845 gm. CO_2 ; or in percent:

	III	IV	Calc. f. $C_{27}H_{38}O_7$
C	68.57	68.41	68.30
H	8.18	8.01	8.09

Quantitative estimation of strophanthidin in crystalline strophanthin.

0.5000 gm. air dry crystalline Kombe strophanthin was placed in a 200 cc. Erlenmeyer flask with 25 cc. 1% H_2SO_4 and boiled one hour with a reflux condenser. The separated strophanthidin was caught on a quantitative filter. The filtrate and wash water (about 50 cc.) was distilled to 25 cc. and boiling continued with a reflux for one-half hour. The separated strophanthidin was caught on the same filter paper and this process once more repeated. The total yield of strophanthidin was dried in vacuo, giving 0.2638 gm., or 52.76%.

0.500 gm. of air dry crystalline Kombe strophanthin was placed in a 200 cc. Erlenmeyer flask with 22 cc. of 2.2% HCl (twice the volume of the same strength HCl as used by Kohn and Kulisch) and boiled one-fourth hour with a reflux condenser, cooled and filtered; the filtrate concentrated to original volume and boiling continued with reflux condenser for one-fourth hour. After cooling, the separated strophanthidin was caught on the same filter and dried in vacuo, giving 0.2533 gm., or 50.46%.

Quantitative estimation of strophanthidin in amorphous Kombe strophanthin.

0.500 gm. air dry amorphous Kombe strophanthin Merck was placed in an Erlenmeyer with 50 cc. 0.5% HCl and heated to 75° and further treated, according to the method of Feist, repeating the heating three times. Dried in a vacuo, 0.2218 gm. strophanthidin was obtained, or 44.36%.

0.5000 gm. air dry amorphous Kombe strophanthin Merck was placed in an Erlenmeyer with 25 cc. of 1% H_2SO_4 and treated as the first determination on crystalline Kombe strophanthin. This gave 0.2234 gm. of vacuum dry strophanthidin, or 44.78%.

The largest yield of strophanthidin obtained by Heffter and Sachs from crys-

talline Kombe strophanthin (air dry) was 58%, from amorphous Kombe strophanthin 50%, and from hispidus strophanthin 45%.

Air dry crystalline Kombe-strophanthin $C_{40}H_{56}O_{15} + 3H_2O$ contains 57.11% anhydrous strophanthidin ($C_{27}H_{38}O_7$).

It is interesting to note that the yield of strophanthidin from amorphous Kombe strophanthin and from hispidus strophanthin is less than from crystalline Kombe-strophanthin, thus indicating (cf. the later pentose estimation in amorphous strophanthin) that the non-strophanthidin moiety is larger in hispidus and amorphous Kombe-strophanthin than in the crystalline Kombe strophanthin.

CRYSTALLINE KOMBE-STROPHANTHIN.
Table of Comparisons.

Strophanthin.	Fraser	Arnaud	Kohn & Kulisch. a)	Feist. b)	Heffter & Sachs.	Own investigations.	
	1 st by tannic acid and dec. by PbO.	Removed impur. by basic lead.	Same as Arnaud.	Same as Fraser.	About same as Arnaud.	By spontan. crystal of alcoh. extr.	
How prepared.						Cry. stroph.	Am. acid stroph.
Reaction with H_2SO_4	green	.....	red	green	dark green	dark green	red-green
Melting point of dried str.	173°	165° not dried	173°	170°	177-181°	178-179°	180°
Average % of hydr. water.	7.48	.....	6.3	6.9
Spec. Rot. of watery sol.	+30	inact. or neg.	+10.12	+28.72	+28.7	+20.6
How dried for comb.	110°	105-109°	100-105°	105-110°	105-110°	105-110°
Aver. % C.	55.43	60.54	60.57	56.17	61.93	61.97	60.50
Aver. % H.	7.56	8.00	7.71	7.36	7.64	7.98	7.62
Aver. % OCH_3	3.58	3.64	4.73	.....	.....
Mol. wgt.	679	.....	783	.....
Strophanthidin %	52.5	50-52	56-58	50-53	.....
Strophanthidin prep. by action of	boil 2.4% HCl	0.5% HCl at 75°	0.5% HCl at 75°	boil 4% and 1% HCl	boil 1% H_2SO_4
Melt. p. of dried	193°	169-170°	169-173°	170°	170-180°
Aver. % hydr. water.	foam 176°	foam 178°	foam 180°	.....
Spec. Rot. of alcoh. sol.	7.0	.....	3.6	3.3
How dried f. comb.	in vac. + H_2SO_4	+45.45	+41.49	+44.26	+44.3
Aver. % C.	71.07	c)	vac. + H_2SO_4	vac. at 110°	vac. at 110°
Aver. % H.	8.63	68.32	66.44	68.57	68.41
Aver. % OCH_3	5.6	8.02	8.07	8.18	8.01
Mol. wgt.	No OCH_3	No OCH_3	.....	.....
Rhamnose estim.	474	.....	.....	.....
OC11 ₃ in sugar	1 mol. rham	.....	none	none
	6.25	.....	.....	.....

- (a) Strophanthin prepared by Merck from hispidus gave Kohn and Kulisch the same results.
 (b) Strophanthin prepared by Schuchardt from hispidus gave Feist the same result.
 (c) Strophanthidin containing chrystalmethylalcohol was dried at 100°.

From this table, it seems very probable that Arnaud separated the same crystalline strophanthin as we did, but by recrystallizing it, converted it into the amorphous one and using amorphous strophanthin for his combustion (supposing it to be a hydrate, which by drying could give off the water) came to wrong conclusions.

The strophanthin of Kohn and Kulisch has a different specific rotation and gives by splitting a different strophanthidin, which may be due to the method of cleavage.

It would be interesting to investigate other strophanthus species, or to prepare Kombe-strophanthin from Strophanthus Kombe seed at different stages of ripe-

ness in an endeavor to obtain the strophanthin of Kohn and Kulisch. It may be stated here that the formula and cleavage equation which Feist²⁵ deduced from the data of Kohn and Kulisch best interpret their results.

The table shows the exact coincidence of our results with the analytical data of Heffter and Sachs; with the exception of the figures for the combustion of strophanthidin and the quantitative estimation of strophanthidin.

Heffter and Sachs seemed to have the same difficulty as Feist in obtaining an anhydrous strophanthidin. It is interesting to note that drying in a heated vacuum readily yields an anhydrous strophanthidin. This is shown by the agreement of the analytical data with the calculated figures and with the data obtained by Feist for his strophanthidin, which was obtained by driving off methyl alcohol from methyl alcohol containing strophanthidin.

The quantitative estimation of strophanthidin, applied by Heffter and Sachs, gives undoubtedly the best results.

When we compare the results of Feist with our own, the question arises: Are the differences due to the use of Fraser's method? By applying the method of Fraser on *Strophanthus Kombe* seed a difficulty arises, how to remove the lead and the nitrogen. The same trouble was mentioned by Thoms²⁶, who presented another method which gave him an ash and nitrogen free amorphous strophanthin. Gerrard²⁷ also stated that the method of Fraser is not clearly published and suggests the removal of the lead with hydrogen sulphide. When we compare the first and second methods of preparation used by Fraser (mentioned before) we observe, that in the one first described the lead is removed by passing carbon dioxide for *several hours* through the solution of strophanthin; in the second method, carbon dioxide is passed for *two or three days*. It would seem, therefore, that Fraser himself had trouble in removing the lead. The explanation of this is that there is present a lead salt of acid strophanthin which cannot be decomposed by CO₂. Boehringer & Sons, who prepared the strophanthin used by Feist in his experiments, followed the process of Fraser. By applying the method of Gerrard (which is similar to Fraser's) a brittle amorphous ash and nitrogen-free strophanthin was obtained which contained 7.04% H₂O (dried at 105° in vac.) 0.2983 gm. strophanthin (acc. to Gerrard) dried at 105° in vacuo gave 0.1938 gm. H₂O and 0.5945 gm. CO₂, or in percent:

$$C=58.82 \text{ and } H=7.80.$$

Although the investigations are not yet finished, it can be stated that at least two closely related glucosides are present. One, the crystalline *Kombe-strophanthin*, and another apparently amorphous strophanthin, both yielding the same strophanthidin. The acid amorphous strophanthin obtained from the crystalline glucoside, while showing nearly the same molecular weight, is found, as will appear later, to be only one-third as toxic to frogs as the crystalline strophanthin. The strophanthin investigated by Fraser and by Feist is probably identical with the amorphous preparations of strophanthin prepared by Heffter and Sachs (the analytical data are not taken up in the table) and with the preparation which

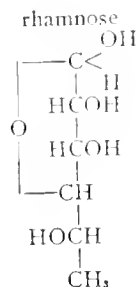
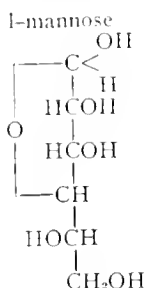
²⁵Berichte, 1900, 33, p. 2067.

²⁶Berichte, 31, p. 271 and 404.

²⁷Pharm. Jour. and Trans., 17 (1887), p. 923.

we made according to the method of Gerrard. The toxicity of this amorphous preparation is almost the same as that of crystalline strophanthin. If this amorphous strophanthin were merely a mixture of crystalline strophanthin, and its acid amorphous modification, this mixture would be less toxic than that of the crystalline variety unless it contained, besides the two, another of greater toxicity than that of the crystalline strophanthin. As no such product is known, it follows that only a minute quantity of the acid derivative is associated with the naturally occurring amorphous strophanthin.

Rhamnose is an easily crystallizable substance and readily yields methylfurfur. It is thus difficult to understand why Feist was unable to obtain rhamnose in a crystalline state, notwithstanding that he obtained strophantobiose methyl-ether as a crystalline body, and only by distilling this sugar complex with 30% sulphuric acid was methylfurfur indicated. It is perhaps not superfluous to consider the close relationship of l-mannose and rhamnose as seen by the structural formula (Winther²⁸ and Hudson²⁹).



We found further that in large amounts mannose does yield a furfural derivative. Five gm. d-mannose gave 0.269 gm. blackish brown phloroglucid. According to Alberda van Ekenstein and Blanksma³⁰ no furfural, but β -oxy δ -methylfurfural is formed by the action of hydrochloric acid on hexoses. Both are precipitated by phloroglucine. Amorphous Kombe strophanthin Merck was also distilled with 12.5% HCl in an endeavor to obtain the phloroglucid of (methyl) furfural. 1.000 gm. of amorphous strophanthin Merck yielded 0.0568 gm. of a dark green phloroglucid, which indicated a pentose. According to the formula of Tollens (Journ. f. Landwirtschaft 1900, p. 379):

$$\text{pentose} = (A + 0.0052) \times 1.017$$

gives 6.3% pentose.

Another experiment 1.000 gm. amorphous strophanthin Merck yielded 0.0577 gm. dark green phloroglucid, or 6.4% pentose.

We have not as yet determined whether this phloroglucid is a mixture of methyl and furfural phloroglucid.

Two molecules of crystalline Strophanthin united by a pentose can explain these observations, but further experiment must decide.

²⁸Berichte, 28, p. 3000.

²⁹Jour. of Americ. Chem. Soc., 1910, 32, p. 345, and p. 889.

³⁰Chemisch Weekblad, 1909, p. 217.

APPENDIX.

While it is known that more than 20 different species of *Strophanthus* seed may be present on the market³¹ there are but three different strophanthins (Kombe-strophanthin, hispidus-strophanthin and gratus-strophanthin or ouabain) of which any chemistry is known. It is a little astonishing that only at the end of a controversy of very well known pharmacognosists and botanists, regarding the question, "What kind of *Strophanthus* for the Pharmacopoeia, in relation to the question, what kind of *Strophanthus* should be taken for culture," Arthur Meyer³² comes to the conclusion that it would be better to investigate first:

1. Which glycosides are contained in the seed of *Strophanthus* Kombe and of *Strophanthus* hispidus? Are they the same or different?

2. Is the clinical action of both drugs and the respective glycosides the same? If not, which drug is to be preferred?

In this paper we have attempted to answer the question relative to the chemistry of *Strophanthus* Kombe, and Heffter and Sachs have done like service for the *Strophanthus* hispidus seed.

In connection with the results of Heffter and Sachs the following experiments, which have been made with unidentified *Strophanthus* hispidus seed, seem to us also worthy of publication. We were able to obtain on the N. Y. market 17 kg. of *Strophanthus* hispidus seed which could be used for experiment.

3.5 kg. powdered hispidus seeds were extracted twice with petroleum ether and gave 950 gm. of a green oil, or 27.1%.

The remaining fat-free powder was percolated with eight times its weight of 70% alcohol. The alcohol was distilled off in vacuo until about 1 liter fluid remained. This fluid was purified with lead subacetate solution and further treated as described before, but no crystals of a glucosid could be obtained. Therefore, we tried to prepare the strophanthidin out of this extract. A large amount of strong alcohol was added, the precipitate filtered and the alcohol of the filtrate removed by distillation in vacuo.

The following method was used: 30 gm. of the thick extract was boiled with 150 cc. 1 % H_2SO_4 in an Erlenmeyer flask of 500 cc. capacity, until the fluid becomes just turbid. The fluid is now quickly cooled to about 50° and the oily brown drops are broken with a glass rod against the walls of the Erlenmeyer flask, until all is reduced to a yellowish white crystalline powder. It is important to do this exactly, though it takes about one-half hour to get it powdered in this way. The strophanthidin can be sucked off on a hardened filter and washed with a little warm water until neutral. The yield of impure strophanthidin was about 10 gm. This strophanthidin was repeatedly recrystallized from boiling alcohol.

³¹Blondel. Journ. de Pharm. et de Chem., 1888, I, p. 297.

³²Gilg: Berichte der Deutsch. pharm. Gesellsch., 1902, p. 183.

Arthur Meyer: Archiv. d. Pharm., 245, p. 351.

Hartwich: Apoth. Zeit., 22, p. 1017.

Gilg: Bericht. der deutsch. pharm. Gesellsch., 18, p. 284.

Arthur Meyer: Archiv. d. Pharm., 246, p. 541.

After separating the impure strophanthidin the filtrate, when again boiled for 20 minutes and treated in the same way, gave but a small yield of strophanthidin.

Properties. Under the microscope this purified strophanthidin shows the same shape of crystals as Kombe strophanthidin.

Melting point. The air dried and anhydrous strophanthidin has the same melting point as Kombe strophanthidin. At about 130° C the air dried substance softens and at 170° C. it melts. The fused mass resulting from melting and cooling the air dried product now melts at about 235° C. By drying in vacuo at 110° C.-115° C., strophanthidin free from water of crystallization could be obtained. Found: 2.9% H₂O calculated for C₂₇H₃₈O₇ + H₂O, 3.66% H₂O.

Specific rotation. 0.5900 gm. air dry strophanthidin was dissolved in 25 cc. methyl alcohol.

$$l = 2$$

$$\alpha = +2.08$$

$$(\alpha) D = \frac{100\alpha}{lc} = 44.07$$

Found for Kombe strophanthidin $(\alpha) D = +44.29$.

Combustion.

I. 0.2345 gm. air dry strophanthidin gave 0.1721 gm. H₂O and 0.5681 gm. CO₂.

II. 0.2076 gm. air dry strophanthidin gave 0.1489 gm. H₂O and 0.5027 gm. CO₂.

Or in percent

	I	II	Calculated for C ₂₇ H ₃₈ O ₇ + H ₂ O
C	66.06	66.04	65.80
H	8.22	8.04	8.20

III. 0.2339 gm. strophanthidin dried at 110°-115° in vacuo gave 0.1654 gm. H₂O and 0.5849 gm. CO₂.

Or in percent:

	III	Calculated for C ₂₇ H ₃₈ O ₇
C	68.17	68.30
H	7.93	8.09

From the conformity of these physical and chemical properties we conclude that this strophanthidin and Kombe strophanthidin are identical.

It was not possible to obtain a crystalline glucosid out of these strophanthus hispidus seeds, but the strophanthidin obtained from this glucosid could be identified.

It seems important for a systematic study of the strophanthus seed species and for related species in general to differentiate between their strophanthidins. A quantitative estimation of the strophanthidin not only forms a convenient method for chemical assays, but also their identification is an important factor in determining the species.

PHYSIOLOGICAL.

The physiological activity of crystalline Kombe strophanthin was investigated by the method of Houghton³³ for the standardization of heart tonics of the digitalis series.

This method is based on the minimum lethal dose to frogs. As there is considerable variation in the lethal dose of this series for frogs at different seasons, etc., it becomes necessary, in order to obtain comparable results, to determine, not the toxicity of the sample per se, but its ratio to that of a heart tonic prepa-

³³Jr. Am. Med. Ass., Vol. 31, p. 959, 1895.

ration of definite strength (the standard). We are thus independent of variation in the resistance of frogs. The minimum lethal dose of the standard is an *experimental* value, while the heart tonic unit (H. T. U.)³⁴ is an *adopted* one and will be discussed later in connection with the experiments.

Since Kombe *Strophanthus* seed is adopted as official by the Pharmacopoeias of most countries, it is of real importance that the active principle of Kombe seed be used in comparing the activity of galenical preparations of *strophanthus*.

In the case of *digitalis* where a number of differently acting bodies may be present, no one can be used as a basis for comparing the therapeutic value of its galenical preparations. Therefore, since it is impossible at the present time to determine the amount of each of the active bodies, it is better to take a typical heart tonic like crystalline Kombe *strophanthin* for such comparisons.³⁵

In the following experiments frogs (*Rana Pipiens*) of from ten to thirty grams were used, but with only five grams difference in the weight of frogs for any one comparison. The material was used in such concentration that about 0.5 cc. was needed for an injection. The injections were made by inserting the needle through the mouth into the ventral lymph sac. The frogs were kept in cages in a trough of running water, and at the end of twelve hours the frogs were examined and the results noted.

The toxicity of crystalline Kombe *strophanthin* is compared with that of some other *strophanthins* in Table I. The results are calculated for crystalline Kombe *strophanthin*, at the minimum lethal dose (M. L. D.) of 0.000001 gm. per gm. of frog, which was found to be the mean M. L. D. for the year.

TABLE I.

	M. L. D. per gm. of frogs.
Crystalline Kombe <i>strophanthin</i> (fr. Ident. K.).....	0.000001 gm.
Amorphous acid <i>strophanthin</i> (derived fr. above).....	0.0000031 gm.
Crystalline <i>gratus strophanthin</i> (Ouabain Merck).....	0.00000042 gm.
Amorphous Kombe <i>strophanthin</i> (Merck).....	0.00000094 gm.
Amorphous Kombe <i>strophanthin</i> (P. D. & Co.).....	0.00000097 gm.
Crystalline Kombe <i>strophanthin</i> (fr. Kombe of trade).....	0.00000095 gm.
Amorphous acid <i>strophanthin</i> (derived fr. above).....	0.0000031 gm.

It is seen that the crystalline *gratus strophanthin* (Ouabain Merck) is about twice as toxic as crystalline Kombe *strophanthin* and the amorphous acid *strophanthin* from cry. K. *strophanthin* is practically one-third as toxic. The amorphous Kombe *strophanthin*, both P. D. & Co. and Merck, and also the crystalline Kombe *strophanthin* from trade Kombe seed, show practically the same toxicity as the crystalline Kombe *strophanthin* from identified Kombe seed.

The mean lethal dose was determined for crystalline Kombe *strophanthin*

³⁴Lancet, June 19, 1909, Am. Jr. Pharmacy, Oct., 1909.

³⁵It has been suggested that crystalline *gratus strophanthin* be used for such a standard. However, there are a number of disadvantages in its adoption.

It has never been exactly determined whether the resistance of frogs to the lethal dose of different heart tonics varies differently as the susceptibility of the frog changes with the season, etc. If crystalline Kombe *strophanthin* is taken as a standard this does not enter into consideration with *Strophanthus* preparations. With *Digitalis* we have a large volume of data which shows that this ratio remains very constant, while with *gratus Strophanthin* very little data is available which bears upon this point.

Gratus Strophanthin or Ouabain, while a nicely crystalline body may contain variable amounts of water of crystallization, and as it does not yield a crystalline *strophanthin* the study of its chemistry is under a disadvantage and the identity of the glucoside is to that extent uncertain. Now that we have a crystalline Kombe *strophanthin* of definite physical and chemical properties that yields in addition a readily crystallizing *strophanthin* so that the identity of the glucoside can be reliably determined, there is an advantage in adopting crystalline Kombe *strophanthin* for such a standard.

from the average of a large number of tests in comparison with a tincture of *Strophanthus*, of which the yearly mean lethal dose was known.

The results are found in Table II:

TABLE II.

Standard Average Tr. of Kombe Strophanthus. (1)				Crystalline Kombe strophanthin, C. P. in solution 70% alc. (2)			
Date.	Dose per gm. of frog in cc.	Result		Dose per gm. of frog in gm.	Result		Corrected for Tr. killing at .000075.
		L.	D.		L.	D.	
1910							
Mar.	.000060	6	0				.00000085
10 to	.000065	5	4	.0000008	3	0	.00000097*
22	.000070*	2	10	.0000009*	0	3	
							.00000088
Apr.	.000080	5	1	.0000010	4	0	.00000099
8 to	.000085*	1	3	.0000011	1	2	.00000106*
11	.000090	0	4	.0000012*	0	3	
							.00000086
June	.000065	1	0	.0000008	3	1	.00000097
27, 28	.000070*	0	2	.0000009	4	1	.00000107*
	.000075	0	2	.0000010*	0	6	
							.00000088
July	.000060	2	0	.0000007	1	0	.00000092
23, 25	.000065*	0	3	.0000008	1	1	.00000104*
	.000070	0	4	.0000009*	0	3	
							.00000088
Aug. 1	.000050	5	1	.0000007	5	1	.0000011
to 3	.000055	3	4	.0000008*	1	5	
	.000060*	1	3	.0000009	0	2	.00000075
							.00000088
Sept.	.000055	2	0	.0000006	1	0	.000000910*
6 to	.000060*	1	5	.0000007	3	1	
19	.000065	0	4	.0000008*	0	2	.0000009
							.00000095
Oct.	.000070	10	0	.0000009	7	1	.0000010*
28, 29	.000075*	3	7	.00000095	5	8	
				.0000010*	0	10	.00000094
							.00000092*
Nov. 1	.000066	2	0	.0000009	3	0	.00000104
	.000069	1	1	.00000095*	0	4	
	.000072*	0	2	.0000010	0	3	.00000084
							.00000094
Dec.	.000070	12	0	.0000009	2	0	.00000103*
	.000075	12	0	.0000010	3	1	
	.000080*	0	2	.0000011*	0	2	
1911				(3)			
Mar.	.000080	4	0	.0000010	7	1	.00000084
	.000085	3	1	.0000011	4	2	.00000092
	.000090*	0	2	.0000012*	0	6	.00000010*
				(4)			
Oct.	.000055	6	2	.00000070	2	0	.00000080
28 to	.000060	4	3	.00000075	5	2	.00000086
Nov. 2	.000065*	12	10	.00000080	1	5	.00000092
	.000070	12	5	.00000085*	0	4	.00000098*
	.000075	0	5	.00000090	2	4	.00000104
				.00000095	1	8	.0000011
				(4)			
1912				.0000007	11	4	.00000075
Apr. 25	.00006	2	0	.0000008	4	5	.00000086
May 8	.00007*	0	2	.0000009*	1	7	.00000097*
				.000001	0	5	.00000107
				(5)			
July	.000055	9	2	.00000075	7	0	.00000080
24	.000060	8	8	.00000080	16	1	.00000086
Aug. 3	.000065	5	11	.00000085	7	12	.00000090
	.000070*	0	15	.00000080*	0	16	.00000097*
Average	.000072			.00000096			.00000100

(1) The standard tincture was kept in the refrigerator.

(2) The crystalline Kombe strophanthin (1 in 1000) in 70% ethyl alcohol was kept at room conditions in amber vials sealed to prevent evaporation. A solution made June 27, 1910, was used in all tests except those made April and June, 1910, unless noted.

(3) Part of these were from solution freshly made up.

(4) These were from solutions freshly made up.

(5) Part of these were from solution freshly made up, and part from solution made up September, 1911, and part from solution of June, 1910 (cf. table of permanency.)

The value .000001 gm. per gm. of frog for the M. L. D. is the mean of the first year's lethal doses for crystalline Kombe strophanthin. If the lethal dose of the standard tincture is taken at .000075 cc. per gm. of frog for the mean M. L. D. of the year, the toxicity of crystalline Kombe strophanthin comes out almost exactly .0000010 gm. per gm. of frog.

The value .000075 cc. for the average lethal dose for this tincture of Kombe Strophanthus is based on the average of a very large number of tests, extending over a number of years. It was the standard previously used for determining the strength of all the heart tonics manufactured by Parke, Davis & Co.

It seems established that the mean M. L. D. for crystalline Kombe strophanthin is .0000010 gm. per gm. of frog (*Rana Pipiens* of 10 to 30 gm.)

Other methods for determining the physiologic value of heart tonics were compared on this crystalline Kombe strophanthin.

The time necessary for a frog's heart to cease beating has been proposed by Focke³⁶ as a method for comparing heart tonic preparations.

He endeavors to determine the value of a preparation by the relation
$$V' = \frac{P}{D \cdot T}$$
 where P is the weight of the frog, D is the dose of the material, and T is the time elapsing before complete cessation of the ventricle beat occurs.

(To be continued)

PHYTOCHEMICAL NOTES.

EDWARD KREMERS, MADISON, WIS.

Introduction.

It is almost twenty-five years ago that the writer was initiated into the realms of chemical research by his teacher and friend, Dr. Frederick B. Power, who was the first professor of pharmacy at the University of Wisconsin and who has contributed so much to plant chemical research, especially during the past ten years as director of the Wellcome Research Laboratory in London. This first experience acquainted the writer at the same time with the charm that is associated with the application of chemistry to the study of plant life, a charm that has never deserted him, though at times the pressure of other investigations and manifold duties compelled him to abandon phytochemical problems. That he has ever recurred to these problems becomes apparent, however, from the accompanying list of published notes, many of which are but fragmentary accounts.

The object of this compilation of titles is not so much to effect an inventory as it is to place in the hands of student investigators of this laboratory a con-

³⁶Arch. d. Pharm. Bd. 241, p. 128. Ibid. Bd. 248, p. 345-76.

venient bibliography of the work done here, and, more particularly, to point out to them the connecting thought that makes many of these notes the result of a deliberate plan rather than of a haphazard seeking for new isolated facts.

This list does not include the titles of articles of purely chemical investigations of plant products, such as menthol and its derivatives, citronellal and its derivatives, abietic acid, etc., some of which have grown out of phytochemical investigations. Neither are the earlier investigations of Prof. Power nor more recent investigations of Prof. R. Fischer on alkaloids included. The catalogue, therefore, is not one of phytochemical investigations of the School of Pharmacy of the University of Wisconsin, but one of the fragmentary notes published by the writer or by students working under his directions.

The first plant investigated was the white ash, a subject suggested by Prof. Power for a graduation thesis (No. 1). The genetic relationship between *Fraxinus americana* from Wisconsin and the manna-yielding *F. ornus* from the Mediterranean suggested the examination of other species of *Fraxinus* that were available in this state. As a result *F. cambucifolia* and *F. viridis* were made subjects for graduation theses by students (Nos. 23 and 19). Whereas mannitol was found in some species, its stereochemical isomer, dulcitol, was found in others. The study of these species was not restricted, however, to the isolation of the hexatomic alcohols mentioned, but their closely related oxidation products, the sugars, and the glucosides were likewise investigated so far as time and material permitted. The study of the several species of *Fraxinus* promises to be fruitful of good results and should be continued, even though the collection of suitable material is difficult at times. See also Nos. 11 and 20.

The writer's first experience with volatile oils was obtained in connection with the oils of pennyroyal (No. 2), and citronella (No. 3), both oils being investigated at the suggestion of Professor Power and under his direction during the academic year 1886-'87. The contribution of the two papers to the American Pharmaceutical Association at the Cincinnati meeting in 1887 caused the writer to join the association at that time. The papers being read by Professor Lloyd, later brought the writer into touch with one who had done much for the chemical study of American medicinal plants when few realized the importance of this subject or the opportunities in this large, uncultivated field. Even today this is largely virgin soil waiting for the pioneer investigator.

The first article on pennyroyal was followed by several others (Nos. 4, 6, 14, 17), which, however, accomplished little more than to establish the presence of pulegone in this oil. The presence of pulegone was later established in two other oils of the mint family, namely: *Pycnanthemum lanceolatum* (Nos. 32 and 40), and *Mentha canadensis* (No. 39).

The initial study of citronella oil (No. 3) led to further studies (No. 13), principally, however, of the aldehyde citronellal, which are not enumerated in the list because they are not essentially phytochemical in character, but purely chemical.

Thus initiated into the study of an exceedingly attractive group of plant products, the writer has spent more time on the volatile oils than on any other subject. Among the oils first examined were some from the family of conifers: *Abies balsamea* (Canada balsam, Nos. 5, 25), *Pinus strobus* (leaves, No. 8),

Pinus palustris (No. 27), *Picea nigra* (No. 28), *Pinus cubensis* (No. 29), *Tsuga canadensis* (No. 33), *Picea alba* (No. 42), *Pinus sabiniana* (Nos. 45 and 66), an unknown species yielding Oregon balsam (No. 56), *Juniperus sabina* (No. 57), *Larix europaea* (No. 58), *Abies amabilis* of the Pacific coast (No. 59), *Pinus longifolia* of India (No. 63), *Pinus murryana*, *Picea Engelmanni*, *Pinus edulis*, and *Pinus flexilis*, all collected by Professor Pammel in Colorado (No. 71). These investigations represent the study not only of oils obtained from the oleoresinous exudations, but also of oils from leaves and cones. Thus, e. g., one of the leaf oils (hemlock) was found to be very rich in bornyl acetate, and, in a rational system of forestry, might be made a source for camphor.

The study of these species was not, however, restricted to their volatile constituents. The very first species enumerated above suggested the examination of the resin acids as well, which have long attracted the attention of chemists. As a result the resin acids from other species were included. Not only were the natural resin acids studied, but also such that had undergone changes in the process of preparation (Nos. 7, 9, 10, 12, 13). These phytochemical studies of the resin acids led, likewise, to the purely chemical study of abietic acid, not enumerated, in which, among other experiments, the first molecular determinations of abietic acid were made as a contribution to the much controverted subject of the size of the molecule of this acid. Other resins and oleoresins examined are those of an unknown species yielding Oregon balsam (No. 56), of *Larix europaea* (No. 58), *Abies amabilis* (No. 59), *Pinus longifolia* (No. 63), and *Pinus sabiniana* (No. 66).

Attention has already been called to two local species of the mint family, *Pycnanthemum lanceolatum* (Nos. 32 and 40), and *Mentha canadensis* (No. 39), which have been examined in addition to pennyroyal, *Hedeoma pulegioides* (Nos. 2, 4, 6, 14 and 17). Other labiate oils examined are those of spearmint, *Mentha viridis* (No. 16), peppermint oil, *Mentha piperita* (No. 18), *Mentha citrata* (No. 73), and the monarda oils.

The study of Monardas was begun in 1895 with the examination of the oil of the local *Monarda fistulosa*, a study that has been continued up to the present time (Nos. 26, 34, 36, 44, 47, 48, 51, 52, 55, 69, 75). It was extended by including *M. punctata* (Nos. 35, 43), growing on the more sandy soil of Arena, west of Madison, and has thus far included *Monarda didyma* (No. 50), from the East, and *Monarda citriodora* (No. 53, 77), from the South. A mere beginning has been made with a fifth species, viz., the *M. bradburiana*. As rapidly as other material can be secured, some of which is now being cultivated on university grounds, more species will be included within the scope of the investigation.

From its inception, the work on the Monardas was a chemical study in comparative plant physiology. As such it has proven exceedingly interesting. Not only, however, have the constituents of different species been compared, but the influence of cultivation and different seasons has been looked into. Moreover, and this is possibly the most important aspect of this study, the volatile constituents have not been studied merely by themselves, but in connection with the other constituents of the plants. Thus, e. g., it has been shown that at least some of the pigments of the monardas stand in direct relation to some of the volatile constituents, and that the ferments contained in the plant exert their influence

on both (Nos. 54, 55 and 69). In order to explain the different shades of color of the same pigment a study of the mineral constituents has been undertaken. For the purpose of taking stock, as it were, of the material accumulated in the study of the *Monardas*, a monograph has been prepared by Miss Nellie Wakeman and published as a bulletin by the University of Wisconsin. However, the work along this line is not to end here. Exact moisture and oil determinations have been made during the summer with cultivated material of *Monarda fistulosa*. A Missouri variety of *M. fistulosa* is being cultivated and a first sample of oil therefrom has already been distilled. Through the kindness of Professor Eberle, a large amount of *Monarda citriodora* has been obtained. It has been distilled and the volatile and pigment constituents are being examined. Further work on *Monarda punctata* is also under way.

Here again, as in previous instances, the initial study of plant products has led to the purely chemical study of some of their constituents. Thus the derivatives of thymol and carvacrol, their oxidation to hydrothymoquinone and thymoquinone, monohydroxy thymoquinone, and dihydroxythymoquinone, all of which are found in *Monarda* oils, and the subtle characteristics of the thymoquinhydrone and other quinhydrone and phenoquinones had to be studied by themselves in order to be able to interpret properly the observations made in connection with the plants. Some of these investigations have been reported on, but are not included in the phytochemical list; others are still in progress. The more general application of the quinhydrone hypothesis of pigmentation, which resulted from the study of the *Monardas*, is now being made the subject of a special study.

Among other oils examined are those of *Candella alba* (Nos. 15, 24), *Eriogon canadense* (Nos. 21, 30, 60, 65), Saw palmetto (No. 46), *Pseudocymopterus anisatus* (No. 49), wintergreen and birch (No. 61), several new *Artemisia* oils (Nos. 62 and 64), American wormseed oil (No. 65*), oils from milfoil (No. 67), California eucalyptus oils (No. 68), celery seed oil (No. 74), wormwood oil (No. 78). The occurrence of methyl salicylate in nature is discussed in No. 41; the absence of hydrocyanic acid in *Mitchella repens* is shown in No. 38.

Triticum repens (No. 22), Kava kava (No. 31), Johore gambier (No. 37), the Johore products of the cocoanut palm (No. 72), and currant wine (No. 76), were likewise investigated. The reasons for taking up these several subjects need not here be mentioned; some have grown out of other work, others were examined upon request, etc.

The reference to methyl salicylate suggests calling attention to another piece of work that has grown out of the work on the volatile oils, but which does not strictly come within the scope of these "Phytochemical Notes." Reference is here had to the classification of the volatile constituents of plants in accordance with rational principles of modern classification and a critical discussion of their occurrence in the vegetable kingdom. The publication of this work was begun some years ago, but had to be interrupted temporarily on account of U. S. P. revision duties. This work has led not only to the classification of other groups of plant constituents, such as glucosides and alkaloids, but to a revision of the entire field of the classification of carbon compounds.

The writer trusts that these brief remarks on work scattered over a period of twenty-five years may throw some light on more than seventy fragmentary pub-

fications that must largely appear without connection or positive plan to the casual reader.

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THE IMPROVEMENT OF MEDICINAL PLANTS.†

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Certain suggestions were made before the last meeting of the Academy for the possible improvement of valuable medicinal forms through the application of breeding methods. Some of these suggestions have been carried out during the past summer upon experimental plots of belladonna, henbane, stramonium, digitalis and cannabis. The results, though only tentative, are extremely encouraging, and indicate a means of obtaining not only greater yields of the resulting drugs, but better and more reliable medicinal products.

Belladonna has shown great uniformity in morphological characters, but considerable variability in the percentage of alkaloids in selected plants. In a comparatively small number this variation was found to be over 50 percent, or from 0.52 percent to 0.87 percent total alkaloids as found in the highest and lowest yielding individuals. Much has been said concerning the variation in total alkaloids as influenced by various conditions. In fact, some experimental work has been done upon the influence of such factors as food elements, light and shade, soils, meteorology, etc., upon the production of alkaloids and other active principles. It now seems apparent, however, that before such data can have any scientific bearing, or be utilized as a means of following the influence of given factors, uniform strains of the plants under investigation must first be obtained. This apparent necessity is due to the wide variations which have been found to exist between the individuals of a given group which have been grown under uniform conditions.

A group of individual plants varying over 50 percent when grown under uniform ecological conditions cannot be expected to behave uniformly when grown under varied conditions. Differences no greater than 50 percent have been reported as being due to certain external influences as affecting all plants upon a given area, while according to recent individual plant investigations, such an area might produce plants varying this much or more among themselves, and representing at the same time any possible mixture with reference to yield. It seems necessary, for this reason, to first obtain a strain of the form under investigation, the individuals of which will react uniformly to certain external conditions. To investigate this point, plants of known alkaloidal yield are being propa-

*These studies will appear in later issues of this publication.—EDITOR.

†Read before the Botanical Section, Indiana Academy of Science, Nov., 1912.



FIG. I. COMMERCIAL TEST AND BREEDING PLOT OF *BELLADONNA*
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana



FIG. II. COMMERCIAL TEST PLOTS OF VARIOUS SPECIES AND VARIETIES OF
DIGITALIS.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.

gated both from inbred seeds and from vegetative cuttings. The progeny thus produced is being grown under the same conditions as the parent plants, as well as under widely different conditions. The alkaloidal yield of these plants will later be taken as a means of determining the results of the various treatments.

The highest yielding individuals from all groups examined are immediately selected as parent plants for possible high yielding strains. The propagation of these favorable individuals is continued throughout the year by means of greenhouse and cold-frame accommodations, and are tested as rapidly as sufficient material becomes available.

The production of henbane, even upon a small experimental scale, has proven extremely difficult. This difficulty is largely due to the ravages of insects, although cultural difficulties with this plant are not uncommon. It will not reproduce itself from open field sowings and transplants with uncertainty. However, a small number of biennial plants were grown and found to test 0.089 percent total alkaloids at the end of the first season's growth, while commercial drug has only averaged 0.067 percent for the past year. The Pharmacopoeia requires that this drug be collected from plants of the second year's growth. The above figures indicate that it may be entirely unnecessary to grow this plant through the second year to obtain a high yield of alkaloids. The annual form was again observed and though no tests were made, an abundance of seed was obtained from which plantings will be continued. The appearance of this annual form in many plantings of henbane of supposed biennial origin has led to much dispute. Its investigation is necessary from this point of view as well as the possibility for developing an annual form which would possess many cultural advantages over the biennial.

The selecting of high-yielding stramonium plants upon a basis of their contained alkaloids has been continued through two years. Averages as obtained from the progeny of selected parent plants have shown a marked increase over those from wild plants growing in the same locality. These averages are 0.61 percent, 0.50 percent, 0.60 percent and 0.64 percent from *Datura Stramonium* L., and 0.49 percent, 0.54 percent, 0.62 percent and 0.68 percent from *Datura tatula* L., as compared with 0.28 percent from wild plants of *Datura Stramonium* L. and 0.42 percent from wild plants of *Datura tatula* L.

Thirty-two forms of the genus *Digitalis* are under cultivation. These consist of all the species and varieties so far obtainable. These must first be tested for identity before any extensive breeding operations can be performed. Physiological tests have been made which indicate great differences in the toxicity of some of the more accurately named species and varieties. Though more strictly biennial in habit, it has been found possible to bring a number of the varieties into flower the same year from seed, thereby shortening any breeding operations by one year.

It has been interesting and valuable to follow the effects of Indiana soil and climate upon the medicinal value of *Cannabis Indica*. This is an imported drug consisting of the flowering tops of *Cannabis sativa* L. It always contains more or less seeds of high percentage germination. Repeated tests have been made upon material obtained from plants grown from seed found in shipments of high-testing drug. Without exception these tests have shown a decrease of from



FIG. III. BREEDING PLOTS OF DIGITALIS.
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana.



FIG. IV. GROWING CANNABIS FROM DIFFERENT GEOGRAPHICAL SOURCES
Experimental Farm, Eli Lilly & Company, Indianapolis, Indiana

40 percent to 60 percent in value as compared with the original shipments from which the seeds were obtained. One strain has been continued under cultivation in the same locality and upon the same soil for four consecutive years, and its value as indicated by physiological tests has fluctuated between 40 percent and 65 percent. This fluctuation has been intermittent, and not in the nature of a regular annual increase or decrease. During this time, however, a marked improvement has resulted in the size and character of the inflorescence. By selection, this has become heavier, more compact, larger and less leafy. A dwarf form has also resulted which would greatly simplify the process of collection.

Figures No. I, II, III and IV show some of the experimental plots, and convey some idea of the scale upon which the work is being done. Large numbers of plants are being used, and these are observed throughout the entire growing season before any selections are made. In this manner the entire life history of the plants, from earliest seedling stage to maturity, is made to serve as a record from which intelligent selections can be made.

DEPARTMENT OF BOTANY, ELI LILLY & COMPANY, Indianapolis, Ind.

METHODS FOR THE ANALYSIS OF CASTILE SOAP.*

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Aside from the fact that the sale of a spurious castile soap may subject the seller to legal prosecution, its use causes the difficulty so frequently encountered in preparing soap liniment, and as many soaps sold as castile are not what they are labeled it is necessary to subject samples to analysis in order to determine whether they are properly made olive oil soaps.

In my own work I have employed the following methods with excellent results:

Sampling. Select a sample which is representative of the whole lot or bar. If in the latter form, shavings should be taken from different parts, such as the outer and inner surfaces, and after being thoroughly mixed kept in a tightly corked bottle from which samples are taken for analysis.

Water. The method of U. S. P., that is taking 0.500 gram of sample, placing in a previously tared beaker containing 1 gram of sand, adding 10 cc. of alcohol and evaporating to dryness and then drying at 110° C. to constant weight is entirely satisfactory. Care must be exercised in heating to conduct the evaporation on a water bath and to employ a small flame, otherwise the sand may be very forcibly ejected from the beaker and the determination ruined.

The quantity of water allowed by the Pharmacopœia, 36 percent, is excessive and should be very much reduced.

Tests for Animal Fats. The Pharmacopœia states that if a four percent alcoholic solution of soap be allowed to cool it should not gelatinize, indicating

* Read before the Kings County Pharmaceutical Society, May 13, 1913

the absence of animal fats. The most satisfactory method of carrying out this test is to place the alcohol and soap in an Erlenmeyer flask and heat on a water bath, employing a reflux condenser to prevent evaporation. When solution is complete the material is allowed to cool to room temperature (not below 20° C.).

This test is not very satisfactory as the Pharmacopœia allows 30 percent of water and as most samples do not contain that much, it is easy to see that instead of a four percent solution one may have almost any strength, depending upon the quantity of moisture, the result being that the solution gelatinizes and indicates animal fat, where none was used.

Therefore the Pharmacopœia should provide tests to determine the origin of the fat employed in making the soap, such as determining the iodine number of the fatty acids and their melting points.

Separation of the Fatty Acids. To a portion of the soap dissolved in water add an excess of diluted sulphuric acid and heat on a water bath until the fatty acids rise to the top in a clear layer, then cool in ice water and when the fatty acids have solidified pour off the water. Repeat this heating and cooling process twice, then filter through paper wetted with water; this will retain the fatty acids which after drying are ready for the tests.

Iodine Number of Fatty Acids. Determine the iodine number of fatty acids as directed by the Pharmacopœia for fats and oils. The writer employs the Hanus method, and as suggested by him (*Drug. Circ.*, 1910, page 106) this should be adopted as the official method because of the keeping qualities of the solution and the shorter time required to make a determination. Having determined the iodine number of the fatty acid a reference to Allen's Organic Analysis, will indicate the fat or oil which was employed in the preparation of the soap.

Melting Point of Fatty Acids. Take some of the fatty acids prepared as above, gently melt and immerse the bulb of a thermometer in the liquid; in a few seconds it will have congealed and all that remains is to put the thermometer through a cork in an ounce wide-mouth bottle and then suspend the bottle and thermometer in a beaker of water and heat the water slowly. The melting point is regarded as the time when the material forms a clear drop on the tip of the thermometer. Allen's Organic Analysis gives the melting points of various fatty acids.

Tests for Silica and Other Insoluble Matter. The Pharmacopœia determines these by dissolving 20 grams of soap in hot alcohol, washing with hot alcohol, then with hot water and weighing the insoluble residue as silica. A better plan is to take 5 grams of soap, dissolve in about 150 cc. hot water and collect the insoluble matter on a tared ashless filter paper and after washing with hot water drying at 105° C. and weighing. The increase in weight of the filter paper indicates the total insoluble matter. After igniting the residue represents insoluble mineral matter.

Sodium Carbonate. The Pharmacopœia directs 20 grams of soap to be dissolved in hot alcohol and poured on a tared filter paper; the increase in weight of the paper after washing with hot alcohol is regarded as sodium carbonate.

silica, etc. After pouring water on this the residue is silica and other insoluble matter; the difference between the two being regarded as sodium carbonate.

Free Alkali. If upon adding a few drops of alcoholic solution of phenolphthalein to the freshly cut surface of the soap a pink color is not developed, the absence of free caustic alkali is indicated.

The Pharmacopoeial method of determining alkalinity is inexact and indefinite.

The method of determining sodium carbonate as above directed can with slight modification be employed for the quantitative determination of free alkali.

In place of 20 grams, take 2 grams of soap, dissolve in about 150 cc. of hot neutral alcohol and filter. After washing the filter thoroughly with hot neutral alcohol add phenolphthalein to filtrate and titrate with N/10 H_2SO_4 . The alkalinity found is calculated as free alkali due to sodium hydroxide. The material insoluble in alcohol is then dissolved in water and titrated with N/10 H_2SO_4 , using methyl orange as indicator. This alkalinity is calculated as free alkali due to sodium carbonate.

If the soap contains both free alkali and free fat the heating with alcohol will influence the result and for that reason it is often advantageous to follow Devine's method of determining free alkali (Journal American Chem. Soc., 1900, page 693), which is carried out as follows:

Weigh 2 grams of soap into a 300 cc. flask, add 50 cc. of alcohol, and excess of N/10 stearic acid in alcohol, a few drops of phenolphthalein solution, connect with a reflux condenser and place the whole on a water bath for half an hour. The stearic acid should constantly be in excess, indicated by the solution remaining colorless. The excess of acid is determined by means of N/10 alcoholic KOH, the difference is the amount required to combine with the total free alkali in the 2 grams of soap taken.

One cc. N/10 acid is the equivalent of .00397 gram caustic soda or .00526 gram sodium carbonate.

Should it be necessary to determine what quantity of the above is free caustic alkali and what quantity is carbonated, Devine's method provides that a second determination similar to the first be started and having calculated the total alkali from the first determination as sodium carbonate add barium chloride to precipitate the alkali, heat a few minutes and after adding phenolphthalein titrate with N/10 stearic acid. This figure represents the cc. required to neutralize the caustic alkali in the soap and the difference between this and the total alkali will correspond to the carbonate.

Refractive Index of Fatty Acids. The determination of the refractive index of the fatty acid often gives valuable information with reference to the origin of the fat employed in making the soap. This determination is easily made if a refractometer is at hand.

More tests could be applied by the pharmacist to enable him to differentiate genuine and spurious olive oil soaps; the above in addition to being sufficient are simple, accurate and easily performed and should therefore be considered for inclusion in the Pharmacopoeia.

PRELIMINARY EDUCATION OF THE STUDENT OF PHARMACY.

C. T. P. FENNEL, PH. G., PHARM. D., CINCINNATI, OHIO.

The early history of pharmaceutical education proves that the aim was to supplement and not to supplant apprenticeship. Prior to the Civil War high ideals were maintained, but soon thereafter these were forgotten. Many conditions were conducive to this fact. The rapid expansion of the country, the revival of commercial interests, the vast opportunities for the rapid acquisition of wealth, all tended to the decay of the apprenticeship system. Commercial exploitation infected all ranks and schools of all kinds were no exception. It was the period of revival of dormant colleges of pharmacy which had aimed at high ideals and still maintained them by a code of ethics unsurpassed by any profession. Unfortunately, the spirit of the period did not recognize their sufficiency. Other colleges devoted to the study of pharmacy opened without any consideration of supply and demand.

Every method of commercial exploitation was resorted to, alluring advertisements, quite commonly exaggerations and not infrequently outright misrepresentations were the means used to attract the ignorant. Such conditions could not last and soon movements of reform began. The pioneers of pharmaceutical education prevailed. Candidates for matriculation in a college of pharmacy were subjected to an examination in the branches of the ordinary grammar school to determine their fitness for admission. This aim towards better qualified students was a movement in the right direction, but like all other reforms under competitive environments, soon became a farce.

The less conscientious saw to it that all applicants were qualified to join the ranks of pharmacy. The failure of this first movement of reform resulted in the drafting of pharmacy laws "for the benefit of the dear public by keeping out incompetent druggists from *other* states." Each state in succession lauded itself in the belief that it was the mecca for all undesirable material of adjoining states. Those that were not quite so egotistical hoped to obtain relief from poor material furnished by colleges of pharmacy and consequently also became staunch supporters of pharmacy legislation. On the other hand, those connected with teaching institutions of pharmacy of commercial exploitation perceived great danger to their financial interests and hence made every effort to incorporate in such laws a clause exempting college graduates from Board examinations. Efforts in this direction proved failures, although a few state pharmacy laws still grant this exemption. Pharmacy legislation by systematic commercial exploitation materially enhanced the financial status of many of these institutions.

It was the period of hot-house development of schools of pharmacy. Scientific schools strongly supported by state finances violated their code of ethics and fostered this commercial exploitation in order to increase their annual state appropriations. Scientific pharmacy was taught in the most entertaining and instructive manner. Education was made easy and profitable by "Quiz Compend" and "Essentials of Pharmacy." These inducements, combined with the general belief that pharmacies were gold mines, brought the most ignorant into the field

of pharmacy. Upon this commercial basis dividends were the essentials and hence the cheapest and most profitable methods to the owners of the institution were maintained. This hot-house period increased the number of schools twelve hundred percent, while the total number of students enrolled yearly barely represents seven thousandths percent of the total population. Preliminary education of a fair degree, combined with the manipulative skill of applied pharmacy were *presumed* and accepted with the knowledge of their being a negative quantity. Again the cry for a higher education was raised, and after many pros and cons, a definite amount of preliminary education was set as a standard for admission to colleges of pharmacy. This demand was not a voluntary one on the part of the colleges. This requirement consisted of one year high-school education or its equivalent. Ten years of agitation finally culminated in an enactment by New York State which induced the majority of pharmacy schools to scramble for recognition.

Many of them have been prolific in promises but very slow in their fulfillment, notwithstanding the fact that some thirty of these institutions have formed a cordon of teaching faculties to enforce all the requirements that will tend to make better pharmacists. Perusal of the proceedings of the thirteenth annual meeting prove conclusively that not all is harmony.

Educators must recognize that the student body is imbued with the idea that they become pharmacists by following the routine work of the present day pharmacy, and that the only qualification is "legal qualification." The pharmacy laws of every state in the Union leave this impression—students apparently care nothing for the "theory and practice of pharmacy," display no desire or curiosity to master its principles, since the routine work does not demand it, and only resort to colleges of pharmacy when they discover that Quiz Compendes and Essentials are not productive of legal qualification. On the other hand, the old line of colleges of pharmacy, acting with the best faith and thoroughly honest in their efforts to raise the standard of education, have increased their facilities and the opportunities for acquiring true pharmaceutical knowledge upon the broadest basis and yet fail in their efforts owing to their too broadening field. The student body have recognized long ago that boards of pharmacy examinations are not in keeping nor within the scope demanded by colleges. That a low estimate is made of pharmacy, its schools and its boards of pharmacy, no one will deny. What are the environmental influences surrounding prospective students of pharmacy to produce this low estimate of the science of pharmacy? Psychologists as well as educators have shown that there is an amazing degree of mental retardation among the school-going population of the United States. Astounding figures are given that are indicative of a gross error. Where is the error? In the American race itself or in the general educational system? Twenty-five years of study and analysis of the recruits to the student ranks in pharmacy have shown a lamentable and constant decrease in culture. Lack of self respect, disrespect to the institution, its rules of common order and decency, even a spirit of condescension in enrolling with the institution, pervades. Unfortunately our public schools of the present day do not produce competent, reliable or thorough knowledge. The whole system of training is faulty and exists solely through the grace of political influence. It is a means of securing political

prestige by catering to the prejudices, ignorance and credulity of the masses. In the very beginning the rod is spared, not for humanitarian reasons, but for fear of antagonizing the voting prerogative of the parent. Idleness, indifference, carelessness and snobbery are condoned and sanctioned for the same reason. Extravagance is encouraged, discontent for the home surroundings is sown by the excessive ornamentation of school buildings and their surroundings; moral culture is ignored completely.

Development of character essential to educational progress finds no consideration and hence it is no wonder that even graduates of our high schools, having all the necessary counts preliminary to the required admission standard of a college of pharmacy, cannot compose a letter clearly and accurately expressing their thoughts; cannot apply the simplest rule of proportion or percentage; in fact, are totally deficient of the power "to think."

The conditions as they exist clearly demonstrate that pharmacy of the present day must be considered from two viewpoints, namely, commercially and professionally. The commercial aspect simply requires the same training that makes any other business man a success in his field of labor. The professional aspect requires particular training in science and this in turn demands more than the common preliminary training. In this there can be no half-way measure; the broadest preliminary education is essential for the proper conception of a professional knowledge of pharmacy. Credentials of preliminary education based upon counts, credits or hours are not worth the paper written on. Legislation presuming a definite kind of preliminary education as a prerequisite to college admission or to state board examinations will never cancel the deficiency in educational quality.

Colleges of pharmacy as well as boards of pharmacy should fully ascertain the educational qualification of the applicant, but it does not concern them how, when or where the qualification was gained. Individuality in colleges as well as in boards of pharmacy will soon assert itself and as in former days each tub will stand upon its own bottom. Each body must adopt its own method of discrimination. It may be guided by suggestions or set rules depending upon environment and economic conditions. They must be qualified to gauge the mental qualification and possess the moral courage to reject if necessary. As a guide to the conservation of professional pharmacy, the Pharmaceutical Syllabus offers a means thoroughly in accord with pharmaceutic progress. This syllabus aims to group the studies essential to the proper conception of pharmacy around a common center. That each of these studies may retain its individuality, it was found advisable to permit expansion or contraction according to the viewpoint of those directly concerned in the teaching of the branch. Secondly, that true depth of knowledge and not a smatter of knowledge be acquired, three grand divisions were instituted, namely *Materia Medica*, *Chemistry*, and *Pharmacy*, with variable time limits for their elucidation. These divisions were further subdivided into twenty-six branches to produce the desired elasticity for individuality of teachers. Minds may differ as to the time limits or allotments of each branch of study, but it is of importance how that time shall be employed, whether wholly didactic, or wholly practical, whether continuous or interrupted.

Under the present status of pharmaceutic legislation, the difficulties of con-

ducting a school of pharmacy are steadily increasing. The demands upon student as well as institution are increased. The expense to the student for the opportunities offered is materially decreased, while the expense to the institution is increased more than five-fold and yet the supply of students is less. That such should be the case is but natural and but the sequence of unnatural, unjustifiable and uncalled for competition. It cannot be remedied by forcing a time limit of twenty-five weeks in two separate years, under the plea of helping the student on the installment plan, ostensibly to give him a chance to earn his living and tuition, but in reality to keep the institution alive. These self-sacrificing institutions increase their probabilities of securing the student's total earning capacity in a period of two and even three years, when the actual time devoted to the whole course amounts to one hundred and fifty to two hundred days of six hours each. It is a method that does not redound to the glory and honor of pharmaceutical education. When dollars and cents are the consideration, the student body can figure as well as the best mathematician and hence avoids schools until forced into them to maintain his earning capacity. The opportunities for acquiring pharmaceutical knowledge must not be restricted to time or place; some acquire it in one year while others may take ten years. Under present conditions, boards of pharmacy are the censors of this knowledge and aim to harmonize the commercial and professional status of pharmacy, and as a result true pharmacy does not progress. To remedy the existing evils, all state pharmacy laws need revision. Druggists with specific privileges and pharmacists with specific education must be created; both under the control of a State Commission composed of qualified men and having the means at their disposal to carry out the provisions of legislation.

SCHOOLS, STATE BOARDS AND PREREQUISITES.

J. F. RUPERT, HOSPITAL STEWARD, U. S. NAVY, ANNAPOLIS, MD.

Pharmacy certainly is associated with troubles in this day of persecution and prosecution. Every pharmacist is likely to be charged at some time or many times in his career with practices beneath the standing of manhood and with being a corruptor of morals and a parasite, preying upon the superstitions, ignorance and innocence of an uninformed public. The responsibility for this situation must be charged to a certain few, who are guilty of all these offenses, and have brought disrepute and disgrace upon our calling. Added to this the passage of the pharmacy laws has caused a further distrust in the minds of many people who do not understand their intent. Next, the "Pure Food and Drugs Act" caused another spasm of distrust and open accusation. Now the anti-patent medicine crusade is taken by the public to be directed against the poor, helpless, struggling druggist. It is a case of "The man is down, don't hit him—kick him!"

Must I mention further, another thorn in the flesh of the druggist—the question of counter prescribing? Here, some unscrupulous ones have incurred the dis-

pleasure of the powerful and well organized medical profession, the very people we desire above all others to have with us. The anti-narcotic laws and liquor legislation and pure drug crusades thrown under the nose of the public at times have not helped to make things better, as all of these are taken as evidence of prevailing conditions in the drug trade and of the insincerity and criminality of the ever persecuted druggist. Add a little financial difficulty and just a little domestic trouble, and the existence of Mr. Druggist will certainly not appear to be the most enviable.

To these external discomforts are added internal intricacies in the way of preliminary educational requirements, prerequisites, pharmacy school standards, uniform state board examination, and what not! Now, according as to how we clear all these hurdles in our path, so will our troubles and distresses in the future be relieved.

These internal troubles have largely been brought upon ourselves, I believe, in the attempt to correct the erroneous ideas of the public. But in our anxious attempts to remove these erroneous ideas we have hopelessly muddled ourselves between professionalism and commercialism. On the one hand, we readily understand that commercialism is essential to the density of our trousers' seats, while on the other hand, professionalism rather hovers over our heads, not always settled complaisantly.

In connection with pharmacy training we have, on the one hand, preparation (schools and home study) for fitness, and on the other hand, determination of that fitness (state boards). Now, if our boards are thoroughly qualified to determine that fitness, why establish prerequisites of any nature? A man without a common school education will have the utmost difficulty in attaining to a position of fitness as determined by a qualified board. As regards prerequisites, I would make the same general remark. On the other side of this question, I want to say, that if we set the standard of work for the pharmacy schools, and provide for the preliminary general education of the student, and then require graduation from these schools, why put the man to an examination?

I do not believe we should make any comparison with the dental, medical or veterinary professions. Their work as professional men covers much more than ours, and I think it is just this mistake we have made in the past. We have problems peculiar to our work and we must solve them by our own initiative, rather than by following the lead of other professions.

Personally I believe that a young man with a high school training, or even less, who is a student and has good stuff in him, working in a small store where he will have considerable time to study, or in a large store where he will have from two to five hours per day to study and is allowed a little space and material to experiment with, together with his observation at the prescription counter, the study of drug journals and general recipe work with good texts on general chemistry, pharmacy and materia medica, all supplemented with the use of eyes and ears and the most commendable virtue of stick-to-it-ive-ness, will make a pharmacist, as good as any state board might require. Schools do not make pharmacists.

I believe the schools are necessary for special training and I do not want to be understood as belittling their value. No young man can do better than to

take a course at a good school, but I would recommend him to do this after a year or two in a store. This will insure much more from the course and will reveal to him just what will be required when his school work is over.

Above all things, I would not stand for allowing two years at school to equal three, four or five years, store experience. Three years' experience, I believe, should be established as a minimum requirement. Experience in a store has value in training which cannot be equalled by any number of years of school work. The firing-line is what "fixes" a man's nerves. All the drilling and technical schooling in the world never made a soldier, but the two must go together.

Not less than two years' store experience in any instance, should be required; however, much credit may be given for school work. Book knowledge might largely make a laboratory man, but it will not make a commercial pharmacist or prescription clerk. In a drug store a man is against a thousand perplexing propositions, and certain qualities of disposition and mind are required to make a reliable, trustworthy and competent man, able to cope safely and successfully with all situations. A man might pass a brilliant examination on paper on technical subjects, but here the ability of the state board to determine the fitness of the man to "practice pharmacy" is concerned.

Selling poisons is a business surrounded by cares and responsibilities that can only be properly appreciated through experience. Compounding prescriptions back of a store counter, to be paid for, and taken home by mother or father for the treatment of disease of loved ones is a more important, responsible and real thing than the same performance at the school bench.

I think the statement made by the Syllabus Committee, as published in the "Bulletin of Pharmacy" in July, 1911, by E. O. Engstrom, as follows, is of some interest in this connection:

"In the determination of the fitness of any applicant to receive a license to practice pharmacy all important facts of his educational history, practical experience, and technical services should be taken into account, including his preliminary general education, his special education in pharmaceutical and other related technical schools, his practical experience in pharmacy and the result of the examinations he has passed, and an average of these three general factors, each assigned its appropriate value, should be adopted as the passing grade."

The practice of pharmacy is very much the same all over the states. Special preparation is naturally necessary, but this special preparation should be in lines which have a direct relation to the practice of pharmacy. Urinary analysis, bacteriology, food examination, analytical chemistry, manufacturing and commercial chemistry, are all special professions, and I do not believe come within the province of State Boards of Pharmacy.

I believe the schools are necessary as institutions for special training, but prerequisite laws will practically bar out many worthy men.

Let us suppose a struggling young man with a little money is married. He is not registered, but has applied himself to study and work and has qualified himself for his profession. He could pass a good examination but the law says he must graduate first. He simply can't afford it. What is he to do? A young man supporting his parents or others of his family might find himself in the same circumstances.

I want to quote from a statement lately made by the "Western Druggist," with which I am on record as being in perfect accord:

"The advocates of prerequisite legislation proceed on the assumption that the colleges have a monopoly of the work of education and without a college course no man can acquire competency in the art of dispensing. The professional standing of thousands of non-graduates of the past and of the present is proof of the fallacy of this assumption, but even conceding that it be warranted in a majority of cases, the exceptions today are sufficiently numerous to make the incorporation of such assumptions in state legislation a grave injustice. Moreover, these two considerations are a governing force:

"First, any man desiring to enter the practice of pharmacy has a constitutional right, if qualified, to demonstrate his qualification before a board of pharmacy and to have those qualifications made effective by the receipt of a certificate of registration conferring the right to practice. Pharmacy laws are not made for pharmacists nor for colleges, but for the protection of the public against incompetency in dispensing medicines. To the extent therefore that such competency is insured the public is protected and no pharmacy act can constitutionally go farther.

"Second, prerequisite legislation means the subordination of the boards of pharmacy to those colleges which under such legislation may dictate to the boards whom they may or may not accord the privileges of an examination. In other words, private institutions are given power over the representatives of the people on the boards of pharmacy, thus surrendering the public interest to private interest—a perversion of legislation not to be tolerated in a free country."

To sum up:

1. If we require the graduation prerequisite, certainly the boards should establish the standards of the schools.

2. Not less than two (2) years' experience in a store (with school work) should be required. Without school work not less than three (3) years' store experience.

3. If we establish preliminary education and graduation requirements, and set the standard of the school, and require store experience, why require examination at all—are not the requirements sufficient?

4. If it is possible for a board of pharmacy examiners to "thoroughly determine the fitness" of the candidate, why establish any requirements at all, other than store experience and examination?

I am not in favor of prerequisite laws. I believe they work great injustice to many worthy men.

CORRESPONDENCE COURSES IN PHARMACY.

L. E. SAYRE, LAWRENCE, KANS.

At the last meeting of the American Pharmaceutical Association in the Conference of Pharmaceutical Faculties there was a motion offered which, if passed would have tended to put a stigma upon every instructor who would give or offer instruction in any pharmaceutical correspondence course. Fortunately, the motion, after a little acrimonious debate, was lost.

Much may be said against correspondence courses. That which applies to one

applies to all. But much may also be said for them. It depends upon the point of view whether one may favor or oppose them. It is the writer's purpose to take the favorable view point in the present article, and what he may briefly say may be regarded as an expression of opinions formed as a result of experience.

Some years ago (1895) I had the pleasure of contributing to a series of correspondence lectures for a correspondence course published in one of the leading pharmaceutical journals. I considered myself fortunate in this work to be associated with such men as H. H. Rusby, Henry Kraemer, Dr. Oldberg, Dr. Charles Rice, and others. I happen to have at present a young man in the University School of Pharmacy who, several years ago, took this correspondence course. This young man next year will be a candidate for the B. S. degree in pharmacy. He will have then completed the four years' course. I asked him to state frankly his opinion of such a correspondence course. He said that he took this when he was clerking and found it exceedingly helpful. It gave him a taste for study and furnished an incentive to attend a school of pharmacy where he could obtain what the correspondence course is not designed to give, a thorough, systematic training. This testimony is practically a repetition of the statements of many others who have taken such courses offered by different institutions. It is not an uncommon thing to have students who had finished a correspondence series come to the university for further study.

In a state such as Kansas (400 by 800 miles) of sparsely settled communities with an immense number of very small towns, it becomes an interesting, if not a serious problem how to reach these various towns and hamlets. For one situated as one is at the State University, whose ambition is to extend the educational influences to the remotest corners of the state, one has to use his ingenuity to reach out to these various districts with education of a technical type. Many of the young men and young women, for various reasons, cannot attend the University or any institution of such a nature, hence it is putting an increasing demand upon the institutions to provide for such as desire instruction such as a university may offer. The criticism of many interested in the training of young men and young women in pharmacy has been that the University of Kansas was blocking the way of pharmaceutical education by requiring higher attainments than the ordinary boy or girl could offer, and as a consequence the Extension Division of the University of Kansas, created by the Board of Regents, conceived the idea of adding to its numerous courses in the various departments that of pharmacy, making itself responsible for such a course and in the support of its efforts asked the cooperation of the School of Pharmacy. It formulated such a course, consisting of 120 assignments, which, if properly studied, would be equal to at least 720 hours of work. This special course the Governor of the State, the Chancellor, and the Board of Regents of the University heartily approved. In addition, the Board of Pharmacy of the State of Kansas approved the efforts by a formal resolution. This extension work the members of the Board of Pharmacy believe will raise the educational average of applicants seeking registration through the Board. Undoubtedly there are many who will surely become so-called pharmacists without school training or without even correspondence training. It stands to reason that they will be the better pharmacists if they take advantage of either.

If we were to summarize the advantages of such a correspondence course we would say that it provides many opportunities for those who could not attend the University. Among them are: (1) Home-study courses for persons who contemplate the vocation of pharmacy, but lack some of the entrance requirements exacted by the State Board of Pharmacy; (2) means of becoming a registered assistant pharmacist; (3) means of preparing for registered pharmacist's examination; (4) means of keeping abreast of the times in those subjects applicable to the practice of pharmacy, in which science is making additions to our knowledge.

For those who are interested in the details of correspondence courses, we might cite as an example one of the courses in *Materia Medica*. This one embraces classification, physical description, and chemical constitution of crude drugs and their physiological properties, methods of dispensing them, their action, and their physiological relationships.

As previously stated, it depends on the point of view whether one may favor or oppose such courses. No one will deny that the ideal course in pharmacy is the one which is known as the regular course, as offered in a well-established curriculum approved by the trained educators of the Conference of Pharmaceutical Faculties. No one who is an advocate of correspondence school work should be considered as inconsistent if he enthusiastically urges the necessity of such ideal courses for the proper training of pharmacists. On the other hand, if one takes the point of view as above referred to—that of striving to reach those who can ill afford, and hence will not attend a systematic course and receive its superior training, one is compelled to take the position of advocating most strongly such courses as are offered by Extension Departments.

AN IMPROVED METHOD FOR ENFORCING PHARMACY LAWS.

LOUIS SCHULZE, PH. G., BALTIMORE, MD.

As we are constantly reminded that the present system of conducting examinations, supervision of pharmacies (as to whether or not competent persons are in charge) and prompt prosecution of violations, are not as satisfactory as they might be; having had nine years' experience as a member of the Board of Pharmacy as at present constructed, the writer has come to the conclusion that a radical change in the general order of boards would be highly beneficial in more fully protecting the public from incompetency on the part of those engaged in conducting stores, and would also elevate pharmacy in the eyes of the public.

It would no doubt be better if the present system of a board consisting of five were entirely abolished and in its stead created a Commission of Pharmacy, into whose hands should be given all matters pertaining to pharmacy in the state, namely, the enforcement of the pharmacy laws, poison and anti-narcotic laws, pure drug laws, and any others that might be enacted to protect the public against incompetency on the part of those engaged in pharmacies or the sale of

impure, deteriorated or inferior drugs. This commissioner should be a retail pharmacist actively engaged in the business, and having had at least ten years' experience as proprietor of a pharmacy, being such at the time of his appointment; he should be required to give at least eight hours per diem to his official duties, be required to visit either, personally, or through one of his agents, every pharmacy in the state at least four times annually, at least one visit being made by himself; he should be provided with an office and necessary office force; also a properly equipped laboratory, and laboratory force, competent to make necessary examinations of drugs, not only as to their purity but in the case of so-called patent or proprietary medicines, as to their contents, so as to be able to state whether they are safe for general medication or not; one month prior to the time of examination of candidates for registration, in conjunction with the dean of the school of pharmacy of the state (if recognized as such by the Conference of Faculties) or where there are two or more such schools, the one nearest his headquarters; or in states where there is no such school, with the President and Secretary of the State Pharmaceutical Association, he should select five retail pharmacists in actual practice, who, in conjunction with himself, should select the questions for the ensuing examination and conduct the same, together with such assistants as might be necessary, giving at least two days of eight hours each to the examination, one day, or more if necessary, being given to a thorough test of the candidates' ability to recognize and identify drugs and chemicals, according to the tests set forth in the U. S. P., the preparing of official preparations and compounding of prescriptions; five days or less after the last day of the examinations, the names of the successful candidates should be published, in one or more of the leading newspapers of the state; and each candidate receive a notice as to whether he was successful or not, from the office of the commissioner, whose name should appear on all certificates issued.

The commissioner should be appointed for a period of five years, and besides all expenses of his office and official duties, such as traveling expenses, etc., receive a salary commensurate with his work; those chosen to conduct the examinations should be paid at the rate of \$5 per day, the time not to exceed ten days at any one time of examination.

SCIENCE AND THE SCIENCES.*

CHARLES ZUEBLIN, BOSTON.

We are beginning to see that democracy is not, as was thought at the beginning of the last century, the condition of society or organization of government which would secure the greatest good of the greatest number; the greatest good of all is now our ideal. We are no longer content with the splendid definition of political democracy enunciated by President Lincoln, "a government of the people, by the people, and for the people." We want something more than po-

*Abstract of a lecture delivered before the Massachusetts College of Pharmacy, Boston, May 15, 1913.

litical democracy, and perhaps a discussion of education as a preparation for this fuller democracy may of itself help to explain democracy—democracy which is not government of, for, and by the people merely, but the life of all, by the cooperation of all, for the welfare of all.

Education necessarily is modified to meet the demands of a progressive civilization. New institutions require new methods, and both the method and content of education, therefore, change with civilization's onward march. In the last century we observe two great social phenomena which were fundamental in their influence on our educational system, speaking now not merely of schools, but of all which goes on through life. These two phenomena are the Industrial Revolution and the Transformation of Domestic Life.

With the eighteenth century in Great Britain, and extending to the rest of the western world in the nineteenth, there occurred an industrial revolution. The most significant of the transformations of the educational system are the introduction into the curriculum of science, in its various applications, evolutionary philosophy, pure science of various kinds, applied science, and the mere inferences of science, which come to us out of the air almost, so that we think in scientific terms, even if we have not minds trained in science.

We are in the presence today of a decay of the influence of the dead languages and mathematics. Whether this is legitimate, whether it will be continued, remains for the scientists and pedagogues to investigate, but we are in the midst of their decadence and rejoicing in it. Not that we believe that it is not good to study these languages, but that in the multiplication of indispensable subjects today these are becoming increasingly non-essential for the mass of the people. If you only stop to think you will appreciate the fact that many do not stay in school long enough to distinguish one writer from another. It cannot matter much that a few have read the *Anabasis*, with some scraps of Homer, all of which they have successfully forgotten. As for mathematics, we recognize that we spend too much time over arithmetic, solving problems which the higher mathematics will enable us to solve much more easily. Intellectual discipline is the only purpose of these things, it would appear, and there are other ways of getting intellectual discipline. It can be done in any useful occupation, and the best discipline of all we get from science.

The reconstruction of philosophy is going to grow out of average working men, getting discipline from their machines, which the older people did not get from the study of the classics and mathematics. This discipline may be very imperfect, because the workman is not led to see its application. He gets laws, but the application of them is difficult.

The school must be an organic part of the daily life, which means that the school must be a cooperative institution; competition must be subordinated. The old method was to make each child independent, by measuring his intellectual acquisitions apart from those of his companions, and making the assisting of one's companions a crime. In the school of the future, to assist will be a mutual benefit. In all the departments of wood-working it is possible for the children to assist each other with benefit to everybody. But if we employ examinations as a measure of mere quantitative acquisition, there can be no mutual assistance. It may be that cooperation will never eliminate competition.

but we cannot go on with a highly organized society where there is no mutual interdependence as a feature of it.

What are some of the possible applications of education to the social science of today, which must be the corollaries of the use of science in the schools. The true place to begin is with births. We do not know how children come into the world, what they are like, what they give promise of being from the standpoint of heredity and environment. We cannot answer these purely quantitative questions—how many children there are and of what ages. There is the decennial census, which tells us a few years after, a few of the things we want to know when they have ceased to be true, for which we pay an immense sum of money to political appointees. If we are to have a democratic government let us have a permanent census bureau keeping us informed all the time about everybody. In that way we should lay the foundation for a scientific treatment of life.

The day is coming when we shall want to use the scientific knowledge we are acquiring so that every child that is going to come into the world will have at its entrance the presence of a government physician to see that it is done properly, and that the child is guaranteed life. The mother may have as many private physicians and other people as are within the command of her pocket-book, and whom she may regard as indispensable, but government subsidies will guarantee a decent entrance into the world. That is a perfectly legitimate requisite on the basis of the scientific knowledge we have. Does that seem Utopian? We already impose penalties for failure to report the death of people. If it is concealed, we look into it and suspect a crime. Surely it is more of a crime not to get children properly into the world.

Children will no longer dread the schools when we begin to use our scientific knowledge in treating these children. We are beginning to have nurses and medical inspection in the schools, and to give the pupils good food once a day, though there are some who would cry out against these things as paternalism. Meanwhile what are we going to do about it? Are we going on in the same old way, breeding no better children, giving all our money to increasing our scientific attainments in the rearing of dogs, horses, cattle, and poultry?

This country suffers from more serious accidents than any other country in the world. It is time we had the data to show to the world why these things happen, and then they will not happen any more. It is almost incredible to think that in a school in Cleveland quite recently two hundred little children had their lives snuffed out, while in a Pennsylvania town a similar holocaust had taken place only a few weeks before, and the disaster at the Iroquois theater in Chicago occurred only a couple of years before. It is incredible that these things should be repeated in the same country, when we know how to protect buildings from fire, and we know what sanitary precautions are, and we do not take them.

We shall go on in this application of science still further. We shall begin to distribute our population. We know where we need people today, and know where we do not need any more people. We do not need any more people for a great many years in Philadelphia, New York, Boston, or any of those seaport towns, and these people who come here should be taken away to the South, the West, and the Northwest, where they are needed.

That will also suggest the problem of unemployment. We shall know where

people are wanted, and see that they are there. We ride in our great, beautiful trains from Chicago to New York, where you get every few minutes the record of the stock market. If you can distribute that kind of information, surely you might distribute some industrial information to the settled towns. It is not necessary to elaborate this further, but we shall culminate by making some provision for the old age that comes to those people who are fortunate enough to live long enough. We shall have pensions for the aged which will enable them to live decently, so that they will not be a burden upon youth, as well as seeing that youth is not dependent upon them.

The relation of education to science means to us a superior discipline in the school for every boy and girl, keeping them there longer in order that they may get the benefits of this science, then putting them into industry better trained, and then extending this democratization of science until it ramifies through the whole of life.

A STRIKING OBJECT-LESSON IN HEREDITY.

The long-looked-for history of the Kallikak family* has at last come from the press of the publishers. Under the auspices of the Training-School for Feeble-Minded at Vineland, N. J., Dr. Henry H. Goddard has investigated and compiled the results of his work in the heredity of this most remarkable family. During Revolutionary days, the first Martin Kallikak (the name is fictitious), descended from a long line of good English ancestry, took advantage of a feeble-minded girl. The result of their indulgence was a feeble-minded son. This son married a normal woman. They in turn produced five feeble-minded and two normal children. Practically all of the descendants of these defectives have been traced as well as those of the two normals.

From both normal and defective descendants of this union came a long line of defective stock. There were 480 in all. Of these thirty-six were illegitimate, thirty-three sexually immoral, twenty-four confirmed alcoholics and three epileptics. Eighty-two died in infancy, three were criminal, eight kept houses of ill fame and 143 were distinctly feeble-minded. Only forty-six were found who were apparently normal. The rest are unknown or doubtful. But the scion of the good family who started this long line of delinquent and defective progeny is also responsible for a strain of an entirely different character. After the Revolutionary War was over, he married a Quaker girl of good ancestry and settled down to live a respectable life after the traditions of his forefathers. From this legal union with a normal woman there have been 496 descendants. All of these except two have been of normal mentality. The exceptions were cases of insanity, presumably inherited through marriage with an outside strain in which there was a constitutional psychopathic tendency. In all the 496 there was not an instance of feeble-mindedness. The offspring descended from this side of the house have universally occupied positions in the upper walks of life. They have never been criminals or ne'er-do-wells. On the other hand, there has not been a

*Goddard, Henry Herbert: *The Kallikak Family, a Study in the Heredity of Feeble-Mindedness*, New York, the Macmillan Company, 1912.

single instance of exceptional ability among the descendants of the first Martin Kallikak and the feeble-minded girl. Most of these descendants have failed to rise above the dead level of mediocrity, indeed, most of them have fallen far below even this minimum standard.

The fact that the descendants of both the normal and the feeble-minded mother have been traced and studied in every conceivable environment, and that the respective strains have always been true to type, tends to confirm the belief that heredity has been the determining factor in the formation of their respective characters. In the cities the descendants of the legal marriage with the normal woman are physicians, lawyers and prominent business men, while the descendants of the feeble-minded mother are almost invariably found in the slums. In the rural districts the descendants of the normal mother and her consort are wealthy and influential farmers, while the others never rise above the rank of farm laborers and shiftless men and women who are unable to subsist without the aid of charity. Many representatives of the defective branch are inmates of almshouses, while there are no paupers at all among the normal descendants.

In many ways this study of Goddard's far outweighs in importance the famous comparison by Dr. Winship of the Jukes and Edwards families. In that case the simple fact was demonstrated that a good family like that of the illustrious Jonathan Edwards had given rise to innumerable examples of the highest intellectual and moral worth, whereas the criminal Jukes for seven generations contributed nothing to the common good, and cost the State of New York large sums of money. But the Jukes family and the Edwards family had no ancestor in common. Their environment was totally different and they lived in entirely separate communities. Although from sociologic and economic points of view the history of the Jukes family and its comparison with that of the family of Jonathan Edwards has great value, it is of but scant scientific importance as compared with that of the Kallikak family, for here a natural object-lesson in eugenics shows unmistakably the manner in which after-coming generations from a given mating receive the characteristics of the dominant strain, which in the elder (illegitimate) Kallikak line was the inferior strain, with only a debased and enfeebled heritage to hand on.—*Journ. A. M. A.*

Reports of A. Ph. A. Committees

REPORT OF THE COMMITTEE ON REVISION OF THE CONSTITUTION AND BY-LAWS.*

CONSTITUTION.

NAME AND OBJECT.

Article I—Name. The name of this Association shall be the American Pharmaceutical Association.

Article II—Object. The object of this Association shall be to unite the educated and reputable pharmacists of America for the purpose of advancing the sciences and art of pharmacy and its professional elevation.

(1) By upholding the dignity and professional standing of pharmacy and the necessity, as a matter of public safety, of restricting pharmaceutical service to those properly qualified by education and training as pharmacists.

(2) By creating and maintaining ethical standards for pharmacists.

(3) By fostering sound pharmaceutical education and proper legislation for regulating the practice of pharmacy and the distribution of drugs.

(4) By regulating the system of employment in pharmacy, so as to prevent, as far as practicable, the evils flowing from deficient training in the responsible duties of preparing, dispensing and selling drugs.

(5) By stimulating investigation and research in subjects relating to pharmacy and allied sciences, and diffusing knowledge by meetings and publications.

(6) By promoting the establishment and uniform observance of correct standards for the identity, purity and strength of drugs, and exposing adulteration, sophistication or misrepresentation in connection with the sale of drugs.

(7) By restricting the dispensing of dangerous and habit-forming drugs to proper medicinal use.

(8) By encouraging relations of good will and respect between physicians, pharmacists and chemists and promoting mutual cooperation of these professions so as to extend their usefulness to the public.

Article III—Members. The membership of this Association shall consist of members, life members, associate members, corresponding members, and honorary members.

Article IV—Officers. The officers of the Association shall be a President, a First Vice President, a Second Vice President, a Third Vice President, a General Secretary, a Treasurer, an Editor of THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, a Reporter on the Progress of Pharmacy, and a local Secretary, all of whom shall be elected annually; the President and Vice Presidents of the Association to be elected by the Association, and the General Secre-

*Presented at the sixtieth annual meeting, ordered to be received and printed in the JOURNAL, and its further consideration postponed until the sixty-first annual meeting.

tary, the Treasurer, the Editor of THE JOURNAL of the Association, the Reporter on the Progress of Pharmacy, and the Local Secretary to be elected by the Council. They shall hold office until the selection of successors.

Article I—Funds. All money received from life membership, together with such funds as may be bequeathed or otherwise donated to the Association, shall be invested by the Committee on Invested and Trust Funds in United States Government, State, County or Municipal securities, the interest of which for any current year only may be used by the Association for its expenses.

Article VI—Amendments. Every proposition to alter or amend this Constitution shall be submitted in writing at one annual meeting, and may be balloted for at the next, when, upon receiving the votes of three-fourths of the members present, it shall become a part of this Constitution. Any proposition to amend the Constitution for the purpose of permitting the expenditure of the permanent invested funds of the Association, shall require a majority of seven-eighths of the members present at a general session.

BY-LAWS.

Chapter I.

MEMBERSHIP.

Article I—Eligibility. Pharmacists, whether in business, retired from business or employed by another, and teachers of pharmacy, chemistry, materia medica or cognate branches, editors and publishers of pharmaceutical journals, official food and drug chemists, whether municipal, state or national, and members of the scientific staffs of pharmaceutical houses, of good moral and professional standing, are eligible to membership, *provided* that any person whose name has been dropped from the roll of members for non-payment of dues may be readmitted after having again made application in regular form, the application being accompanied by the usual fee; or he may be readmitted, without such application on the payment of all back dues; in the latter case his membership shall date from the time when he first joined the Association, as previously printed in the Roll of Members, and notice of such action shall be inserted in the addendum to the Treasurer's report.

Article II—Election. Every applicant for membership must subscribe to the Constitution and By-Laws and have his application, endorsed by two members of the Association in good standing, accompanied by the first year's dues, presented to the Council, when, upon receiving the affirmative vote of three fourths of the members of the Council the applicant shall be elected.

Objections to applications (which must be in writing with the member's name attached) shall be presented to the Council, which shall decide upon the objections.

Article III—Year of Membership. The calendar year shall be the fiscal year of the Association, and any application for membership made during the fiscal year shall apply to the current year. Any application made between June 1 and December 31 may be applied to the *next* fiscal year if stated on the application, and such applicants may receive THE JOURNAL of the Association free until the date of their active membership commences. Publications of the Association distributed free to members shall be sent for the fiscal year selected.

Article IV—Election of Delegates as Members. Any accredited association, organization, or institution whose credentials are recognized by the Council, shall be entitled to send five delegates as its representatives to the annual meeting who, if present, may become members of the Association on signing the Constitution and paying the annual contribution for the current year; *provided* that the provisions of this article shall not be so construed as to elect any one against whom well-founded objections may be raised, or to reinstate any member whose name shall have been dropped from the roll for non-payment of dues; nor shall any one who has been expelled from the Association be received as a delegate. All credentials should be sent to the General Secretary at least two weeks in advance of the annual meeting.

Article V—Annual Dues. The annual dues of each member shall be three dollars, payable in advance to the Treasurer. Members neglecting to pay their dues for more than sixteen months shall be dropped from the roll of members.

Article VI—Annual Dues and Subscription. If the annual dues (three dollars) and the annual subscription to THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION (three dollars) be paid, *in advance, at the same time*, a reduction of one dollar shall be allowed.

Article VII—Life Membership. Any member of the Association who shall pay to the Treasurer the sum of \$50.00 during the first year of membership, and also any member not in arrears, who after ten years, shall pay the sum of \$40.00, or after fifteen years the sum of \$30.00, or after twenty years the sum of \$20.00, or after twenty-five years \$15.00, and any member who has paid annual dues for thirty-seven consecutive years, shall become a life member, and shall be exempt from all future payment of dues.

Life members may obtain the JOURNAL of the Association as provided for in Chapter VIII, Article VI.

Article VIII, Associate Membership. Teachers in medical schools, editors of medical journals, medical men who are members of the American Medical Association, and representative teachers and students of the sciences who are not eligible to regular membership, may be elected associate members under the same conditions as apply to general membership. Associate members shall not be required to pay dues, nor be eligible to hold office or to vote, but they shall be required to make an annual subscription of three dollars, for which they shall receive the JOURNAL of the Association.

Article IX—Corresponding Membership. Any pharmacist, chemist or scientist who may be deemed worthy may be elected to corresponding membership. Corresponding members shall not be required to pay dues, nor be eligible to hold office or to vote, but they shall be expected to make contributions to the JOURNAL of the Association, and shall receive the JOURNAL of the Association without charge.

Article X—Honorary Membership. Any pharmacist, chemist or scientist, who may be thought worthy of such distinction, may be elected to honorary membership, but not more than three honorary members shall be elected in any one year. Honorary members shall not be required to pay dues, nor be eligible to hold office or to vote. They shall receive the JOURNAL of the Association without charge.

Article XI—Certificates of Membership. On the payment of three dollars a member shall be entitled to receive a certificate of membership on paper signed by the President, one vice-President, the General Secretary and the Treasurer, or on the payment of five dollars, the certificate issued shall be on *parchment*.

Article XII—Resignation. Resignations of membership shall be made in writing to the General Secretary or Treasurer, but no resignation shall be accepted from any one who is in arrears to the Treasury.

All resignations shall be acknowledged in writing by the officer who receives them, and shall be reported to the Council.

Article XIII—Expulsion. Any member may be expelled for improper conduct or the violation of the Constitution and By-Laws of the Association, but no person shall be expelled unless offered a hearing, and then only upon two-thirds of all the votes cast at a general session.

Chapter II.

THE ELECTION OF OFFICERS AND COUNCIL MEMBERS.

Article I—Election by the Association. Nominations for the offices of President, First Vice President, Second Vice President and Third Vice President to serve for one year from the next annual meeting, and three members of the Council to serve for three years from the next annual meeting, shall be made annually by the Committee on Nominations, within two months after the adjournment of the annual meeting.

These names shall be submitted by the General Secretary by mail to every member of the Association, together with a request that the member indicate his preference on a ballot enclosed for the purpose, and return the same by mail within one month from the date of issuing the letter containing the nominations and the ticket.

The ballots received shall be sent by the General Secretary to the Board of Canvassers, who shall determine the results of the election, and certify the same to the General Secretary.

The results of the election shall be announced by the General Secretary in the JOURNAL of the Association.

Article II—Election by the Council. The General Secretary, the Treasurer, the Editor of the JOURNAL of the Association, the Reporter on the Progress of Pharmacy and the Local Secretary shall be elected annually by the Council at the annual meeting.

Chapter III.

THE PRESIDENT AND VICE PRESIDENTS.

Article I—Duties of the President. The President shall preside at all the sessions of the Association, except those of the Sections, and shall perform such duties as custom and parliamentary usage require.

At the first session of the annual meeting at which he presides, he shall present an address on such subjects as he may deem of importance to the Association, and he may, at any time, make suggestions in writing to the Council or to any standing or special committee.

He shall sign certificates of membership and, when necessary, authenticate by his signature the proceedings of the Association.

He shall appoint all the committees not provided for in the by-laws or otherwise by the Association.

In the absence of the General Secretary or any other officer of the Association, he shall appoint a General Secretary or other officer *pro tempore*.

Article II—Duties of the Vice Presidents. The Vice Presidents shall assist the President in the performance of his duties; and in the absence or inability of the President to serve, the Vice Presidents, in the order of rank, shall officiate in his place. In the event of death, resignation or removal of the President, the vacancy shall be filled by the ranking Vice President.

Chapter IV.

THE GENERAL SECRETARY.

Article I—Salary. The General Secretary shall receive from the Treasurer an annual salary not to exceed \$1200, and also the amount of his expenses incident to the annual meeting of the Association and attendance upon the meetings of pharmaceutical or scientific bodies in the interest of the Association, such expense not to exceed an appropriation by the Council for this purpose.

Article II—Duties. The General Secretary shall give members due and timely notice of the meetings of the Association in the JOURNAL of the Association; and, in conjunction with the Local Secretary and the Secretary of the Council, he shall prepare, for publication, the program of the annual meeting, which shall be submitted to the Council for approval.

He shall keep the minutes of the proceedings of the general sessions and carefully preserve, on file, all reports, essays and papers of every description presented to the Association, and shall be charged with the necessary correspondence.

He shall sign certificates of membership and verify the credentials of delegates.

He shall notify the members of the committees of the Association of their appointment and the duties assigned them.

He shall cooperate with the Committee on Nominations and also the Board of Canvassers, and promptly announce the results of the annual election in the JOURNAL of the Association.

He shall distribute such publications of the Association as may be assigned him, under the direction of the Council, and perform such other duties as may be required.

Chapter V.

THE TREASURER.

Article I—Salary. The Treasurer shall receive an annual salary not to exceed \$1000, and also, the amount of his expenses incident to the annual meeting.

Article II—Duties. The Treasurer shall collect and take charge of all money, securities and deeds belonging to the Association which may come into his possession and shall hold the same subject to the direction and disposition of the Association.

He shall pay no money except upon the written order of the General Secretary accompanied by the proper vouchers.

He shall hold, sign and issue the certificates of membership.

He shall report to the Council, previous to each annual meeting, the names of

delinquents or such members as have failed to pay their annual dues for one year after due.

He shall present a statement of his accounts at each annual meeting of the Council, that they may be audited.

Article III—Bond. The Treasurer, in order that he may qualify for the office to which he has been elected, shall file a good and sufficient bond or bonds for such amount as the Council may require for the faithful performance of his duties as Treasurer, this bond or bonds to be signed and executed by one or more bonding or fidelity insurance or guaranteeing companies acceptable to the Council.

Chapter VI.

THE EDITOR OF THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Article I—Salary. The Editor of the JOURNAL of the Association shall receive an annual salary to be fixed by the Council.

Article II—Duties. The Editor shall have charge of the editing, publication and distribution of the JOURNAL, subject to the direction of the Committee on Publication.

In case of illness or other inability of the Editor to carry on the work of the JOURNAL, the Committee on Publication shall make the best arrangements possible to continue the work.

Chapter VII.

THE REPORTER ON THE PROGRESS OF PHARMACY.

Article I—Salary. The Reporter on the Progress of Pharmacy shall receive an annual salary not to exceed \$1200.

Article II—Duties. The Reporter on the Progress of Pharmacy shall prepare, under the direction of the Committee on Publication, a comprehensive report upon the improvements and discoveries in pharmacy, chemistry, materia medica and collateral branches of knowledge, together with such information as will furnish an epitome of the progress in the sciences and art of pharmacy, and of its votaries, both at home and abroad.

All journals and publications received in exchange for the publications of the Association, and such other journals and publications as may be deemed necessary for the proper preparation of the report, shall be sent to the Reporter on the Progress of Pharmacy, and these, after use, shall be promptly forwarded to the Editor of the JOURNAL of the Association for preservation.

He shall cooperate with the Editor of the JOURNAL of the Association in the preparation of subject-matter for that publication.

In case of the illness or inability of the Reporter to carry on the work of the Report, the Committee on Publication shall make the best arrangements possible to continue the work.

Chapter VIII.

THE LOCAL SECRETARY.

Article I—Residency. The Local Secretary shall reside at or near the place where the next annual meeting of the Association is to be held.

Article II—Duties. He shall assist the General Secretary in his duties.

He shall cooperate with the Council and any Local Committee appointed by the Council for making arrangements for the annual meeting, acting as the chairman of such committee.

He shall correspond with the chairmen of the different sections and committees, and with members, in advance of the annual meeting, for the promotion of its objects.

He shall have the custody of specimens, papers, and apparatus intended for use in any exhibition at the annual meeting.

Article III—Exhibition. Should the Council decide to have an exhibition at the annual meeting, this shall be in charge of the Local Secretary and a Local Committee to be elected by the Council.

Chapter IX.

THE COUNCIL.

Article I—Composition. The Council shall consist of nine members elected by the Association, as provided for in Chapter II, Article I, together with one member elected by each Section of the Association, one member elected by each Branch of the Association, and the President, Vice Presidents, General Secretary, Treasurer, Editor of the JOURNAL of the Association, Reporter on the Progress of Pharmacy, the Secretary of the Council and the Local Secretary, ex-officio.

The elected members of the Council shall be elected to serve for a term of three years.

Any vacancy which may occur in the Council shall be filled for the unexpired term, by election, by either the Association (as provided for in Chapter II, Article I), or by the Section, or the Branch, at its next annual meeting.

Article II—Duties. All the business of the Association which is not of a scientific character or transacted at the general session shall be in charge of the Council, which is empowered to transact business for the Association during and between the times of meetings.

The Council shall have charge of all properties and of the financial affairs of the Association, and shall have the exclusive right to appropriate money from the Treasury and reduce any appropriation when necessary.

It shall elect the members of the Association and have charge of the revision of the roll of members, and shall act as the Committee on Nominations.

It shall report to the general sessions of the Association only new resolutions adopted, appropriations of money and amendments to the Constitution and By-Laws, but the Association in general session assembled shall have the right to call for a report upon any action of the Council and revise the same.

It may accept or reject the credentials of delegates.

It shall have control of the editing, publication and distribution of the publications of the Association.

It shall determine the place for holding the next annual meeting of the Association, selecting, annually, by ballot, one of the three places recommended by the Executive Committee.

It shall determine, also, the time for holding the annual meeting.

It shall have control of all arrangements for the annual meeting and shall decide when an exhibition shall be held.

Article III—Members of Association at Council Meetings. Any member of the Association may attend the meetings of the Council, and may, by vote of the Council, be permitted to speak upon any subject under discussion.

Article IV—Officers. The officers of the Council shall consist of a Chairman, Vice Chairman and a Secretary, to be elected annually by ballot, by the Council.

Article V—Committees. The Council shall annually select the following standing committees: (1) An Executive Committee; (2) a Committee on Finance; (3) a Committee on Publication; (4) a Committee on Invested and Trust Funds, and (5) an Auditing Committee.

The Council shall select, from time to time, such special committees as may be necessary for the proper prosecution of its work.

The committees shall report annually to the Council, or at such other times as the Council may direct.

Article VI—Publications. The Council shall issue, and furnish to subscribers, a monthly journal to be called the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, which shall contain such matters as may be deemed desirable by the Committee on Publication.

The subscription price for the JOURNAL of the Association shall be three dollars per annum to members and non-members alike. *Subscriptions by members to the JOURNAL must be separate and distinct from the annual dues, although both may be paid at the same time,* as provided for in Chapter I, Article VI.

The subscription price for the JOURNAL of the Association to *life members* shall be three dollars, but if paid in advance a reduction of one dollar shall be allowed. Life members elected prior to the adoption of these by laws shall receive the JOURNAL of the Association without charge.

The Council shall issue, and furnish to each member, not in arrears for dues, a Report on the Progress of Pharmacy published in such form as may be approved by the Council. The publication shall contain, in addition to the Report on the Progress of Pharmacy, a list of the officers and committees, prefatory matter, Constitution and By-Laws, rules, roll of members, list of members, and such other matter as may be deemed desirable by the Committee on Publication.

If the Report on the Progress of Pharmacy be issued in the form of a volume, the Council shall fix the price for which copies may be sold.

Chapter X.

MEETINGS AND SECTIONS.

Article I—Annual and Special Meetings. The general meetings of the Association shall be held annually at a time and place to be fixed by the Council and communicated to the members through the JOURNAL of the Association at least three months prior to the date of meeting. The Council shall determine, also, the number, order and conduct of all the sessions. Special meetings of the Association may be called by the affirmative vote of three-fourths of the membership of the Council.

Article II—General Sessions. The general sessions of the annual meeting shall be devoted to the general business of the Association and such reports of

the Council as the latter may present, or which may be called for by the Association. At all sessions of the Association, nineteen members shall constitute a quorum.

Article III—Sections. In order to systematize and make more efficient the work of the Association, Sections shall be formed, as follows: (1) Section on Commercial Interests; (2) Scientific Section; (3) Section on Education and Legislation; (4) Section on Practical Pharmacy and Dispensing; (5) Historical Section.

Article IV—Sessions of Sections. The sessions of each Section shall be held annually at such time and in such order as shall be determined by the Council. The conduct of the work of each Section shall be under rules issued by the Council and its work only shall be considered at the session or sessions assigned it. Any Section shall have the right to adjourn a session to such time as does not conflict with the general sessions of the Association or the initial session of another Section.

Article V—Duties of Sections. Each Section, through its officers, shall solicit papers and propose suitable subjects for discussion at the annual meeting, arrange the business of the Section in advance, and attend to such duties as may be referred to it. It shall make reports to the Council, if desired.

The special duties of each Section shall be as follows:

(1) *The Section on Commercial Interests* shall consider the commercial problems of pharmacy and the best methods of regulating them.

(2) *The Scientific Section* shall study questions of scientific interest affecting the growth and development of pharmacy and allied sciences.

(3) *The Section on Education and Legislation* shall investigate and keep a record of, and compile for reference, the enactments of the states and nation regulating the practice of pharmacy and the sale of drugs, and shall report, from time to time, on the progress of pharmaceutical education and legislation.

(4) *The Section on Practical Pharmacy and Dispensing* shall solicit papers pertaining to the actual practice of pharmacy in retail stores.

(5) *The Historical Section* shall present matters of especial historical interest in pharmacy, and shall secure the collection of letters, papers, etc., written by members of the Association, which, when so collected, shall remain in the custody of the Historian and be available for reference.

Article VI—Officers of Sections. Each Section shall annually elect, by ballot, a Chairman, Vice Chairman and Secretary, and, every three years, a member of the Council.

The officers of the Section on Practical Pharmacy and Dispensing shall be composed of members actually engaged in the retail drug business.

The member of the Council representing the Historical Section shall act as the Historian, also.

Article VII—Duties of Section Officers. The Chairman of each Section shall preside at the annual meeting of his Section, appoint all committees and fill vacancies in same; and present an annual address upon such subjects as he may deem of importance to the Section. In the absence of the Chairman, the Vice Chairman shall preside, or, in his absence, the Section shall elect a temporary Chairman.

The Secretary of each Section shall present at each meeting a brief report of the conditions within the Section, shall keep the minutes of each session, and secure all the documents and papers submitted and place these in the hands of the General Secretary as promptly as possible; he shall, also, transmit to the General Secretary the names of officers and committees elected or appointed.

Article VIII—Papers. Any person desiring to submit a paper to the Association, shall present the same to the Chairman of the particular Section to which it refers. Not more than ten minutes shall be allowed for the presentation of any paper, unless by unanimous consent of the Section. All papers presented to the Association and its Branches shall become the property of the Association, with the understanding that they are not to be published in other publications than those of the Association, except by the consent of the Committee on Publication.

Article IX—Order of Business for the First General Session of the Association. The order of business of the *first* general session of the annual meeting of the Association shall be as follows:

1. Meeting called to order by the President of the Association, or ranking official, and the appointment of a General Secretary pro tempore, if necessary. Nineteen members shall constitute a quorum.

2. Reading of the President's Address, and the appointment of a Committee on President's Address.

3. Reading of the List of Accredited Delegates by the General Secretary.

4. Reading of the names of committees, and the general sessions or Sections to which they shall report.

5. Reading of the minutes of the Council relating to new resolutions adopted, appropriations of money and amendments to the Constitution and By-Laws.

6. Incidental business.

7. Adjournment until next session.

Article X—Order of Business for the Second General Session of the Association. The order of business for the *second* general session of the Association shall be as follows:

1. Meeting called to order by the President of the Association, or ranking official.

2. Reading of the minutes of the preceding session.

3. Reading of reports from the Council.

4. Report of the General Secretary.

5. Report of the Treasurer.

6. Reports of Standing Committees.

7. Reports of Special Committees.

8. Unfinished business.

9. New business.

10. Adjournment until next session.

Article XI—Order of Business of the Subsequent General Sessions of the Association. The order of business for the *subsequent* general sessions of the Association shall be as follows:

1. Call to order by the President of the Association, or ranking official.

2. Reading of the minutes of the preceding sessions.

3. Reading of reports from the Council.
4. Reports of Officers.
5. Reports of Standing Committees.
6. Reports of Special Committees.
7. Unfinished business.
8. New business.

9. Adjournment until next session, and adjournment *sine die* at final session.

Article XII—Order of Business for the Sessions of the Sections. The order of business for the sessions of the Sections shall be determined by each Section for itself, subject to the rules of the Council.

Article XIII—Installation of Officers. At the final general session of the Association, and of the Sections, the newly elected officers of the Association and the Sections shall take their respective places.

Article XIV—Social Sessions. The Council may arrange for such social sessions, to be held after the second general session, as it may deem expedient, but no business of the Association shall be transacted at these social sessions.

Chapter XI.

COMMITTEES.

Article I—Standing Committees of the Association. The standing committees of the Association shall be as follows:

1. Committee on National Formulary.
2. Committee on U. S. Pharmacopœia.
3. Committee on Standards for Unofficial Drugs.
4. Pharmaceutical Syllabus.
5. Committee on Legislation.
6. Committee on Membership.
7. Committee on Transportation.
8. Committee on Nominations.
9. Board of Canvassers.
10. Committee on Prizes and Fellowships.
11. Committee on Obituaries and Memorials.

Article II—Committee on National Formulary. The Committee on National Formulary shall be appointed by the President of the Association and shall consist of fifteen members. The Committee shall be a continuous committee to serve from one revision of the National Formulary until the next is completed, and any vacancy therein shall be filled by the appointing power. The Chairman of the Committee shall be elected by the Council.

Whenever deemed advisable by the Council the Committee on National Formulary shall revise, for publication, the subject matter of the National Formulary, eliminating, correcting and adding, in the light of advanced knowledge, and prosecuting the necessary original research work; and shall submit the manuscript, when completed, to the Council.

The Committee on National Formulary shall report annually to the Council and at such other times as the Council may direct.

Article III—Committee on U. S. Pharmacopœia. The Committee on United States Pharmacopœia shall be appointed by the President of the Association and

shall consist of ten members. The Committee shall be a continuous committee to serve from one revision of the U. S. Pharmacopœia until the next is completed and any vacancy therein shall be filled by the appointing power. The Chairman of the Committee shall be elected by the Council.

The Committee on U. S. Pharmacopœia shall collect statistics upon the use of official and non-official drugs and shall ascertain the general wishes and requirements of the profession throughout the country regarding changes and improvements in the U. S. Pharmacopœia. It shall critically examine the official formulas, and methods of testing. It shall study the formulas and methods of other pharmacopœias, as well as those suggested in pharmaceutical literature generally. It shall devise new and original improvements, and in every way seek to perfect the U. S. Pharmacopœia and to cooperate with the Committee of Revision of the U. S. Pharmacopœia.

The Committee on U. S. Pharmacopœia shall report annually to the Council, and at such other times as the Council may direct.

Article IV—Committee on Standards for Unofficial Drugs. The Committee on Standards for Unofficial Drugs shall be appointed by the President of the Association and shall consist of sixteen members, four to be appointed each year for terms of four years each. The Chairman of the Committee shall be elected by the Council.

The Committee on Standards for Unofficial Drugs shall investigate those drugs, pharmaceutical preparations, chemical products and other commodities that enter into the commerce of drugs which are not recognized by the U. S. Pharmacopœia and shall frame standards for such articles, defining their identity, purity and strength.

The Committee on Standards for Unofficial Drugs shall report annually to the Council and at such other times as the Council may direct.

Article V—Committee on Pharmaceutical Syllabus. The Committee on Pharmaceutical Syllabus shall be appointed by the President of the Association and shall consist of seven members, one to be appointed each year for a seven-year term.

The Committee on Pharmaceutical Syllabus shall report annually to the Association through the Section on Education and Legislation, shall be members of the National Committee on Pharmaceutical Syllabus and shall recommend to the Association the payment of a proportionate share of the current expenses of the National Committee.

Article VI—Committee on Legislation. The Committee on Legislation shall be appointed by the President of the Association and shall consist of five members.

The Committee on Legislation shall study the subject of pharmaceutical legislation, scrutinize all bills affecting pharmacy proposed in the U. S. Congress and states, territories and dependencies, and encourage or discourage the passage of the same as the interests of pharmacists demand. It shall cooperate with allied organizations working toward the same end.

Article VII—Committee on Membership. The Committee on Membership shall be appointed by the President of the Association, and shall represent every state or section covered by the membership of the American Pharmaceutical As-

sociation. The Secretary of the Council shall act as the Secretary of the Committee on Membership.

The function of the Committee on Membership shall be to promote an increase in the membership and extend the field of usefulness of the Association. The Committee, through its Chairman, shall keep a correct list of the members of the Association, and through its Secretary, shall present to the Council the names of all applicants for membership who have complied with the entrance requirements.

Article VIII—Committee on Transportation. The Committee on Transportation shall be appointed by the President of the Association and shall consist of one member from the cities of Boston, New York, Cleveland, Chicago, St. Louis, New Orleans, Atlanta, St. Paul or Minneapolis, Denver and San Francisco, and the General Secretary, Local Secretary, and Secretary of the Council.

The Committee on Transportation shall arrange for the transportation of members from the different sections of the United States and Canada to the place of annual meeting and return. When possible, it shall obtain railroad rates and publish the same in the JOURNAL of the Association sufficiently early to enable members who desire to attend the annual meeting to obtain the necessary information.

Article IX—Committee on Nominations. The Committee on Nominations shall consist of the members of the Council.

The Committee on Nominations shall report the names of *three* nominees for each of the offices of President, First Vice President, Second Vice President and Third Vice President, and for each of the three Council memberships, to the General Secretary, within two months after the adjournment of the annual meeting.

Article X—Board of Canvassers. The Board of Canvassers shall be appointed by the President of the Association and shall consist of three members.

The duty of the Board of Canvassers shall be to receive from the General Secretary the ballots cast by the membership and determine the results of the annual election. Only the votes of those members whose dues have been paid for the current year shall be counted. Officers and members of the Council shall be elected by a plurality of the votes cast. The Board of Canvassers shall promptly certify to the General Secretary the results of the election.

Article XI—Committee on Prizes and Fellowships. The Committee on Prizes and Fellowships shall be appointed by the President and shall consist of five members.

The Committee on Prizes and Fellowships shall determine the awards to be made on behalf of the Ebert Prize, and such other prizes as may be established.

Essays to be submitted for prizes shall be presented at the annual meeting, to the appropriate Section, referred to the Committee on Prizes and Fellowship, and examined, to ascertain which, if any of them meet the requirements of the founders. In all respects the Committee shall be governed by the stipulations of the donors.

Fellowships may be established and awarded under conditions approved by the Association.

Article XII—Committee on Obituaries and Memorials. The Committee on

Obituaries and Memorials shall be appointed by the President of the Association and shall consist of three members.

The Committee on Obituaries and Memorials shall prepare or have prepared appropriate biographical sketches of the members of the Association for publication in the JOURNAL of the Association, reporting, also, matters of special interest to the Section on Historical Pharmacy at the annual meeting.

Article XIII—Vacancies. Vacancies on any of the committees appointed by the President of the Association shall be filled by him for the unexpired terms.

Chapter XII.

RULES OF ORDER AND DEBATE.

Article I—Enforcement of Rules. The customary rules governing parliamentary bodies shall be enforced by the presiding officer, from whose decision, however, appeals may be taken, if required by two members, and the meeting shall thereupon decide without debate.

Article II—Discussion of Questions. When a question is regularly before the assembly and under discussion, no motion shall be received but (1) to adjourn, (2) to lay on the table, (3) for the previous question, (4) to postpone to a certain day, (5) to commit or amend, (6) to postpone indefinitely, which several motions have precedence in the order named. A motion to adjourn shall be decided without debate.

Article III—Speaking on Questions. No member shall speak more than once on the same subject except by permission, and after every member wishing to speak has spoken.

Article IV—Yea and Nay Vote. On the call of any member the yeas and nays shall be ordered when every member shall vote, unless excused by a majority of those present, and the names and manner of voting shall be entered on the minutes.

Article V—Points of Order. On all points of order not covered in these by-laws, the Association shall follow the established usages of assemblies governed by parliamentary rules.

Chapter XIII.

BRANCHES.

Article I—Formation. Branches of this Association may be formed wherever it may appear that not less than fifteen members of this Association, in good standing, will participate, provided that no more than one such branch shall be formed in any one state, province, district or territory, unless the additional branches shall be formed at a point distant one hundred miles or more from any branch already established in the same state, province, district or territory.

Article II—Members. All active or voting members of Branches must be members of the American Pharmaceutical Association in good standing.

Article III—Objects. The objects and aims of the Branches of this Association shall be the same as set forth in the Constitution of this body, and the acts of Branches shall in no way commit or bind this Association, and can only serve

as recommendations to it. And no Branch shall enact any article of Constitution or By-Laws in conflict with the Constitution or By-Laws of this Association.

Article II—Member of Council. Each Branch having twenty-five or more active or voting members shall be entitled to elect a representative to the Council of this Association every three years, who shall become and continue to be a member of the Council for that time.

Chapter XIV.

AMENDMENTS AND SUSPENSIONS OF BY-LAWS.

Article I—Amendments. Every proposition to alter or amend these By-Laws shall be submitted in writing at a general session, and may be balloted for at any subsequent general session, when, upon receiving the affirmative votes of three-fourths of the members present, it shall become a part of the by-laws, except that the Council may make, by unanimous vote, such changes and such changes only, as may be required to adapt them to the rules and regulations of the United States postal authorities.

Article II—Suspensions. A by-law may be suspended by the unanimous consent of the members of the Association present at any session, such suspension applying only to the particular suspension.

BY-LAWS OF THE COUNCIL.

Chapter I.

OFFICERS.

Article I—Election. The officers of the Council shall consist of a Chairman, Vice Chairman and a Secretary, who shall be elected annually, by ballot, by the Council.

Chapter II.

THE CHAIRMAN AND VICE CHAIRMAN.

Article I—Duties. The Chairman shall preside at all meetings of the Council; in his absence or inability to serve, the Vice Chairman, or, in the absence of both, a Chairman pro tempore, shall perform the duties of Chairman.

The Chairman of the Council shall confer with the Chairman of the various standing and special committees of the Association during its sessions, in order to arrange and expedite the business of the Association.

Chapter III.

THE SECRETARY.

Article I—Salary. The Secretary shall receive an annual salary to be fixed by the Council, and also, the amount of his expenses incident to the annual meeting.

Article II—Duties. The Secretary shall keep the minutes of the proceedings of the meetings, and carefully preserve all reports and papers of every description received by the Council.

He shall read all the papers handed him by the Chairman for that purpose, and shall call and record the yeas and nays whenever they are required to be called.

He shall notify the Chairman and members of every Council committee in writing, of their appointments, stating the business upon which the committee is to act.

He shall give notice of the time and place of each meeting of the Council.

He shall act as the Secretary of the Committee on Membership and the Executive Committee.

Chapter IV.

COMMITTEES.

Article I—Standing Committees of the Council. The standing committees of the Council shall be as follows:

1. Executive Committee.
2. Committee on Finance.
3. Committee on Publication.
4. Committee on Invested and Trust Funds.
5. Auditing Committee.

Article II—Executive Committee. The Executive Committee shall consist of four members of the Council holding no office, to be elected annually by the Council, and the President, General Secretary, Treasurer, Chairman of the Council and Secretary of the Council. The Chairman of the Council shall be the Chairman of the committee and the Secretary of the Council its Secretary.

The Executive Committee shall be the executive body of the Council and shall have the power to act for the Council in all matters referred to it by the Council. It shall report all actions to the Council. If deemed necessary, it may hold special meetings, at a convenient place, between the times of annual meetings.

The Executive Committee shall report to the Council the names of three places at which, in their judgment, it will be desirable for the Association to hold the next annual meeting, and the Council shall determine the time and place of such meeting.

Article III—Committee on Finance. The Committee on Finance shall consist of the General Secretary, the Treasurer and the Secretary of the Council. The General Secretary shall be the Chairman of the Committee.

The Committee on Finance shall audit all bills of the Association and pass on orders on the Treasurer for the payment of bills. It shall submit to the Council in December, of each year, a budget of appropriations for the ensuing fiscal year.

Article IV—Committee on Publication. The Committee on Publication shall consist of the President of the Association, the Treasurer, the Editor of the JOURNAL of the Association, and the Chairman and Secretary of the Council. The Committee shall elect the Chairman.

The Committee on Publication shall direct the editing, publication and distribution of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, the Report on the Progress of Pharmacy, and such other publications as may be published by the Association, and shall frame rules, approved by the Council, for the proper conduct of the work.

The Committee on Publication shall have full discretionary power to omit from the JOURNAL of the Association any paper, in part or in whole, that may be presented to it.

Article V—Committee on Invested and Trust Funds. The Committee on Invested and Trust Funds shall be appointed by the Chairman of the Council, and shall consist of three members of the Association, with the General Secretary and Treasurer ex-officio.

For the first year one member shall be appointed for a term of one year, and one for a term of two years and one for a term of three years, and thereafter in the expiration of the term of any such appointee a member shall be appointed for the full term of three years.

The Committee on Invested and Trust Funds shall carefully study the nature and status of all invested, savings and trust funds of the Association, and make a written report to the Council, which shall be published in full in the JOURNAL of the Association. The committee shall not have the power to invest or re-invest any of such funds except as instructed by the Council.

The Committee on Invested and Trust Funds shall receive applications, in writing, from members for grants from the interest derived from the *Centennial Fund*, the applications to be accompanied by a statement of the investigation to be made, and of the amount and cost of material required, it being understood that the results of the investigation shall be published, if desired by the Council.

The Committee on Invested and Trust Funds shall consider these applications, and, at as early a date as possible, shall report to the Council an outline of the proposed investigations, together with such recommendations of grants from the available funds as it may deem proper.

The Council shall decide upon these recommendations, and in case the grants be approved, the Chairman of the Council shall direct orders to be drawn upon the Treasurer in favor of those members to whom grants have been made.

Article VI—Auditing Committee. The Auditing Committee shall be appointed by the Chairman of the Council, and shall consist of three members of the Association residing in or near the same city or town as that in which the Treasurer resides.

The Auditing Committee shall meet in January of each year and carefully examine all the books, accounts, vouchers, savings bank books, etc., of the Treasurer, return the same to him within two weeks after the date of their reception, and report thereon, in writing, to the Council, prior to the first day of February following. Or, by consent of Council, the committee may employ professional auditors.

Chapter IX.

COUNCIL SESSIONS.

Article I—Council Sessions. The Council shall meet annually previous to the assembling of the Association, and at such other times as it may determine, or at the call of the Chairman of the Council. Nine members of the Council shall constitute a quorum.

Article II—Special Sessions. On the written application of three members to the Chairman of the Council, a special session shall be called.

Article III—Order of Business of Council at First Session. The order of business of the *first* session of the Council shall be as follows:

1. Reading of the minutes of the previous meeting.
2. Unfinished and deferred business and business referred to the Council by the Association.
3. Election of members.
4. Reading of reports and appointment of special committees.
5. Nomination of officers for ensuing year.
6. New business.
7. Adjournment until next session.

Article IV—Order of Business of Council at Subsequent Sessions. The order of business at *subsequent* sessions (except the final) shall be:

1. Reading of the minutes of the previous meeting.
2. Unfinished and deferred business and business referred to the Council by the Association.
3. Election of members.
4. Reports of Standing Committees.
5. Reports of Special Committee.
6. New business.
7. Adjournment until next session.

The order of business at the *final* session of the Council shall be the same as above, except (1) the Council shall be organized for the new year; (2) the officers for the ensuing year shall be elected and installed; (3) the standing committees of the ensuing year shall be appointed, and, (4) the minutes of the previous session shall be read and approved, after which, (5) adjournment shall be had.

Chapter X.

RULES OF ORDER.

Article I—Voting. In all questions arising before the Council or its committees, and which can be disposed of by a positive or negative vote, the Chairman of the Council, or the Chairman of the Committee, may take the vote of their respective bodies in writing, and the same shall have the same force and effect as if the members had been personally present, a majority of the votes cast being considered sufficient to decide a question. The ayes and nays of such votes taken by the Council shall be entered upon the minutes.

Chapter XI.

AMENDMENTS AND SUSPENSIONS OF BY-LAWS.

Article I—Amendments. Every proposition to alter or amend these by-laws shall be submitted in writing at one session and may be balloted for at the next session of the Council, when upon receiving the affirmative vote of three-fourths of the members present, it shall become a part of these by-laws.

Article II—Suspensions. A by-law may be suspended by the unanimous consent of the members present at any session of the Council, such suspension applying only to the particular suspension.

J. W. ENGLAND, Chairman.

PRELIMINARY REPORT OF COMMITTEE ON TRANS- PORTATION.

The Committee on Transportation reports the following routes and rates from the respective points named to the Nashville meeting, August 18-23. In certain cases, other routes may be more convenient for individual members.

The rates generally are summer tourist rates, which usually amount to about 2 cents a mile each way, or 1 and $\frac{1}{3}$ fares for the round trip. This is preferred to the vexatious "certificate plan" with its red tape and bothersome details.

From New Orleans to Nashville.

Via Q. & C. and N. C. & St. L.

Leave New Orleans, 7:00 p. m.

Arrive Chattanooga, 10:05 a. m.

Leave Chattanooga, 12:05 noon.

Arrive Nashville, 4:30 p. m.

Round trip fare from New Orleans, \$24.10; from Shreveport, \$23.40; from Monroe, \$19.35.

Sleeping car berth from New Orleans to Chattanooga, \$3.00 for upper; \$2.50 for lower. Parlor car from Chattanooga to Nashville, 75 cents.

From Cincinnati to Nashville.

Via Louisville & Nashville.

Leave Cincinnati, 11:15 a. m., 6:00 p. m., 10:30 p. m.

Arrive Nashville, 8:35 p. m., 2:10 a. m., 8:05 a. m.

Single rate, \$8.30; party rate, 10 or more, \$6.05.

From Pittsburgh to Cincinnati.

Via Baltimore & Ohio, Southwestern.

Lv. Pittsburgh, 8:35 p. m., 7:45 a. m.

Lv. Wheeling, 12:00 noon, 11:00 a. m.

Lv. Bellaire, 11:25 p. m., 10:25 a. m.

Lv. Zanesville, 1:58 a. m., 12:48 p. m.

Lv. Newark, 3:00 a. m., 1:45 p. m.

Ar. Columbus, 3:55 a. m., 2:35 p. m.

Lv. Columbus, 4:00 a. m., 2:40 p. m., 7:15 a. m., 5:00 p. m.

Lv. Wilmington, 5:44 a. m., 4:06 p. m.

Lv. Midland City, 5:58 a. m., 4:20 p. m., 9:19 a. m., 7:41 p. m.

Ar. Cincinnati, 7:45 a. m., 5:50 p. m., 11:00 a. m., 8:55 p. m.

From New York and Eastern Points to Cincinnati.

Via Big Four Route.

Lv. New York, 2:00 p. m.

Lv. Albany, 5:53 p. m.

Lv. Syracuse, 10:06 p. m.

Lv. Cleveland, 3:50 a. m.

Ar. Columbus, 7:15 a. m.

Ar. Springfield, 8:22 a. m.

Ar. Dayton, 9:05 a. m.

Ar. Cincinnati, 10:50 a. m.

Lv. New York, 4:00 p. m., 5:30 p. m.

Lv. Boston, 10:30 a. m., 2:00 p. m.

Lv. Albany, 7:00 p. m., 9:00 p. m.

Lv. Syracuse, 10:06 p. m., 7:15 a. m.

Lv. Cleveland, 3:50 a. m., 7:10 a. m.

Ar. Columbus, 7:15 a. m., 10:40 a. m.

Ar. Springfield, 8:22 a. m., 11:44 a. m.

Ar. Dayton, 9:05 a. m., 12:28 p. m.

Ar. Cincinnati, 10:50 a. m., 1:55 p. m.

Lv. Buffalo, 7:30 p. m.

Lv. Cleveland, 12:05 a. m., 12:30 p. m.

Lv. Columbus, 3:40 a. m., 4:00 p. m.

Ar. Springfield, 4:40 a. m., 5:14 p. m.

Ar. Dayton, 5:20 a. m., 5:35 p. m.

Ar. Cincinnati, 7:15 a. m., 7:30 p. m.

Stop-over at Glasgow Junction, either way, for visit to Mammoth Cave. Round trip fare from Glasgow Junction to Cave, \$2.00; meals and lodging at Cave, 50 cents each. Cave fees, including guide, \$1.00 for short and \$2.00 for long route.

From Detroit to Cincinnati.

Via C. H. & D. Ry.

Lv. Detroit, 8:20 a. m., 12:05 p. m., 10:45 p. m.

Ar. Toledo, 10:00 a. m., 1:55 p. m., 12:25 a. m.

Lv. Toledo, 10:10 a. m., 2:00 p. m., 12:40 a. m.

Lv. Lima, 12:15 p. m., 3:53 p. m., 3:00 a. m.

Ar. Dayton, 2:20 p. m., 5:55 p. m., 5:10 a. m.

Lv. Dayton, 2:25 p. m., 6:00 p. m., 5:25 a. m.

Ar. Hamilton, 3:25 p. m., 6:49 p. m., 6:20 a. m.

Ar. Cincinnati, 4:20 p. m., 7:40 p. m., 7:20 a. m.

From Mackinac City to Cincinnati.

Via Pennsylvania Lines.

Lv. Mackinac City, 10:10 p. m., 12:01 p. m.

Lv. Petoskey, 11:40 p. m., 1:25 p. m.

Lv. Grand Rapids, 7:02 a. m., 8:50 p. m.

Ar. Ft. Wayne, 12:01 p. m., 1:05 a. m.

Ar. Richmond, 3:40 p. m., 4:25 a. m.

Ar. Cincinnati, 5:55 p. m., 6:55 a. m.

From Detroit to Cincinnati.

Via Big Four Route.

Lv. Detroit, 8:27 a. m., 12:00 noon, 10:35 p. m.

Lv. Toledo, 10:30 a. m., 1:48 p. m., 12:30 a. m.

Lv. Fostoria, 11:20 a. m., 2:42 p. m., 1:26 a. m.

Lv. Springfield, 2:10 p. m., 5:25 p. m., 4:55 a. m.

Lv. Dayton, 2:59 p. m., 6:02 p. m., 5:32 a. m.

Ar. Cincinnati, 4:45 p. m., 7:40 p. m., 7:25 a. m.

From Cleveland to Cincinnati.

Via Pennsylvania Lines.

Lv. Cleveland, 9:00 p. m.

Lv. Akron, 10:45 p. m.

Ar. Columbus, 1:50 a. m.

Lv. Columbus, 2:36 a. m.

Ar. Cincinnati, 6:30 a. m.

Lv. Cleveland, 9:00 a. m.

Ar. Columbus, 1:45 p. m.

Lv. Columbus, 2:00 p. m.

Lv. Youngstown, 7:00 a. m.

Lv. Alliance, 8:05 a. m.

Lv. Orrville, 9:20 a. m.

Ar. Columbus, 12:15 p. m.

Ar. Cincinnati, 5:25 p. m.

From New York and Eastern Points to Cincinnati.

Via Baltimore & Ohio, Southwestern.
 Lv. New York, 23d St., 9:50 a. m., 6:50 p. m.
 6:50 p. m.
 Lv. New York, Liberty St., 10:00 a. m., 7:00 p. m.
 Lv. Newark, 9:55 a. m., 6:16 p. m.
 Lv. Philadelphia, 24th and Ches., 12:30 p. m., 9:21 p. m.
 Lv. Wilmington, 1:06 p. m., 9:54 p. m.
 Lv. Baltimore, Mt. Royal Sta., 2:43 p. m., 11:23 p. m.
 Lv. Baltimore, Camden Sta., 3:00 p. m., 11:32 p. m.
 Lv. Washington, 4:10 p. m., 12:40 a. m.
 Lv. Cumberland, 8:28 p. m., 4:45 a. m.
 Lv. Oakland, 10:27 p. m., 6:50 a. m.
 Lv. Grafton, 12:11 a. m., 8:55 a. m.
 Lv. Parkersburg, 2:38 a. m., 11:25 a. m.
 Lv. Athens, 3:35 a. m., 12:24 p. m.
 Lv. Chillicothe, 5:70 a. m., 2:05 p. m.
 Ar. Cincinnati, 8:10 a. m., 5:15 p. m.

From New York and Intermediate Points to Cincinnati.
Via Erie Ry.

Lv. New York, 2:35 p. m., 9:05 p. m.
 Lv. Jamestown, 2:16 a. m., 2:30 a. m.
 Lv. Meadville, 5:50 a. m., 4:48 a. m.
 Lv. Youngstown, 5:59 a. m., 6:28 a. m.
 Lv. Ravenna, 7:35 a. m., 7:38 a. m.
 Lv. Akron, 9:32 a. m., 8:26 a. m.
 Lv. Mansfield, 10:35 a. m., 10:50 a. m.
 Lv. Marion, 10:54 a. m., 1:30 a. m.
 Ar. Cincinnati, 3:00 p. m., 6:45 a. m.

From Baltimore and Intermediate Points to Nashville.

Via Pennsylvania Lines.

Same train service as for New York and Philadelphia, leaving Baltimore at 4:20 a. m., arriving at Nashville next day at 8:00 p. m.

From New York and Intermediate Points to Nashville.

Via Pennsylvania Lines, Southern Ry., and N. C. & St. L.

Lv. New York, Penna. R. R., 9:30 p. m.
 Lv. Philadelphia, Penna. R. R., 12:15 a. m.
 Ar. Washington, Penna. R. R., 3:55 a. m.
 Lv. Washington, Southern Ry., 4:10 a. m.
 Ar. Lynchburg, Southern Ry., 4:10 a. m.
 Ar. Chattanooga, Southern Ry., 10:00 p. m.
 Ar. Nashville, N. C. & St. L., 2:55 a. m.

The car arrives Nashville at 2:55 a. m., and is parked and may be occupied until 7:00 a. m.

From New York and Intermediate Points to Nashville.

Via Pennsylvania Lines and L. & N. Ry.

Lv. New York (Eastern Time), 2:04 a. m., 8:34 p. m.
 Lv. N. Philadelphia, 4:00 p. m., 10:26 p. m.
 Lv. Philadelphia, 4:31 p. m., 10:48 p. m.
 Lv. Washington, 3:10 p. m., 7:50 p. m.
 Lv. Baltimore, 4:20 p. m., 8:55 p. m.
 Lv. Harrisburg, 7:25 p. m., 1:20 a. m.
 Ar. Pittsburgh (Eastern Time), 2:16 a. m., 7:30 a. m.

Ar. Pittsburgh (Central Time), 1:16 a. m., 6:30 a. m.
 Lv. Pittsburgh (Central Time), 1:20 a. m., 8:15 a. m.
 Ar. Columbus, 6:25 a. m., 1:45 p. m.
 Ar. Cincinnati, 10:50 a. m., 5:25 p. m.
 Ar. Louisville, L. & N., 2:45 p. m., 2:20 p. m.
 Ar. Nashville, 8:35 p. m., 8:05 a. m.

From Chicago to Nashville.

Via Chicago & Eastern Illinois Ry.

Leave LaSalle St., Chicago, 5:20 p. m., Sunday, August 17.

Arrive Nashville, 7:55 a. m., Monday, August 18.

One way fare, \$10.75; party rate, ten or more, \$9.30.

Pullman, lower berth, \$2.50; upper \$2.00.

The party rate from Nashville to Cincinnati is \$6.05, available for those who wish to attend the N. A. R. D. Convention on the way home.

From California Points.

Via Southern Pacific.

Summer tourist rates apply generally over the trans-continental lines. The round trip from San Francisco to Memphis is \$70.00, and to Chicago \$72.00. Sleeper to Memphis, \$12.00 each way; to Chicago, \$13.00 each way.

The time of the going trip is limited to 15 days from the starting point, and the final return limit is three months from the date of purchase.

Members desiring more detailed information than is given above should consult local railroad officials, or the nearest member of the Transportation Committee.

The members of this Committee are as follows:

W. Bodemann, Hyde Park, Chicago, Ill.
 William C. Alpers, City Island, New York.
 H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.
 Charles G. Merrell, P. O. Box 432, Cincinnati, O.
 J. O. Burge, 303 Eighth Ave., S., Nashville, Tenn.
 Charles B. Whilden, Suite 909-910 Butler Bldg., San Francisco, Cal.
 F. C. Godbold, 3613 Chestnut St., New Orleans, La.
 W. S. Elkin, Jr., Peachtree and Marietta Sts., Atlanta, Georgia.
 Charles M. Ford, 1236 Ogden St., Denver, Col.
 C. Herbert Packard, 7 Central Sq., E., Boston, Mas.
 Lewis C. Hopp, 1104 Euclid Ave., Cleveland, O.

Respectfully submitted,
 W. BODEMANN, Chairman.

Report on the Progress of Pharmacy

For the Year 1912

(Twelfth Installment.)

A New Method for the Separation of Thorium.—T. O. Smith and C. James have observed that thorium may be separated quantitatively from the rare earths by means of sebacic acid.

Thorium sebacate is a voluminous, granular precipitate which settles readily and is easily filtered.

The thorium solution should be neutral, and hot, and a slight excess of a hot solution of sebacic acid added slowly with continuous stirring. The precipitate which forms at once is immediately filtered and thoroughly washed with boiling water. The sebacate washes readily and the operation may be performed with ease in a very short time. The precipitate is rapidly dried, ignited, and weighed as thorium dioxide.

The results given show close agreement with that obtained by the use of oxalic acid, and the presence of cerium, lanthanum, praseodymium, neodymium, and traces of samarium, gadolinium, etc., did not seem to effect the accuracy of the separation.

Sebacic acid may be prepared by heating castor oil soap with sodium hydroxide, and is very sparingly soluble in cold water, but fairly soluble in boiling water.—*Jour. Am. Chem. Soc.*, March, 1912, Vol. 34, p. 281. (L. A. B.)

The Standardization of Potassium Permanganate Solution by Sodium Oxalate.—R. S. McBride of the Bureau of Standards has undertaken a study of the best methods and material for the standardization of Potassium Permanganate Solution.

It was found that Sodium Oxalate was probably best suited as a standardizing material, owing to its cheapness, ease of determining its purity, stability under ordinary conditions, and the convenience, precision, and accuracy with which it may be used.

As the result of large numbers of experiments, and the study of the possible errors

entering into the reaction, McBride recommends the following method of procedure:

In a 400 cc. beaker, dissolve 0.25-0.3 gm. of sodium oxalate in 200 to 250 cc. of hot water (80-90° C.), and add 10 cc. (1:1) Sulphuric acid. Titrate at once, with 1/10 N KMNO₄ solution, *stirring the liquid vigorously and continuously*. The permanganate must not be added more rapidly than 10-15 cc. per minute, and the last 1/2-1 cc. must be added dropwise with particular care to allow each drop to be fully decolorized before the next is introduced. The excess of KMNO₄ used to cause an end point must be estimated by matching the color in another beaker containing the same amount of acid and hot water.

The solution must not be below 60° C. by the time the end point is reached, if necessary use heat to maintain temperature.—*Journ. Am. Chem. Soc.*, April, 1912, Vol. 34, p. 393. (L. A. B.)

The Conversion of Cinchonine and Quinine into their poisonous isomers, Cinchotoxine and Quinotoxine, and the relation of this Conversion to the Toxicity of the Cinchona Alkaloids.—H. C. Biddle of the University of California points out that the abnormal action of quinine or cinchonine as occasionally observed and usually ascribed to some idiosyncrasy of the patient, may be due to the formation in the system of small quantities of cinchotoxine and quinotoxine, and has made a study of the conditions under which cinchonine and quinine are converted into their poisonous isomers.

He finds that when salts of cinchonine or quinine are heated with water, with or without excess of acid, at 98-102° C. they give rise to varying quantities of their poisonous isomers, cinchotoxine or quinotoxine.

The velocity of the rearrangement rises as the dissociation constant of the acid falls, the change being practically quantitative with

such acids as acetic, lactic, citric, tartaric, malic, etc., while on the other hand with such acids as hydrochloric, being hardly detectable, even after 48 hours heating.

The same changes take place at 36° C., the only difference from that observed at 98-102° C. being the diminished rate of conversion, about 2% conversion being observed with the organic acids at this temperature. Sunlight has the property of producing similar changes at ordinary temperature, in solutions of cinchonine or quinine.—*Jour. Am. Chem. Soc.*, April, 1912, Vol. 34, p. 500. (L. A. B.)

A System of Qualitative Analysis for the Common Elements.—This article forms a continuation of a series of articles under the same main title, by A. A. Noyes, published in the *Journal American Chemical Society*, this particular paper being "Part V—Detection of the Acidic Constituents."

Owing to the nature of the subject matter, the paper is not abstractable.—*Journ. Am. Chem. Soc.*, May, 1912, Vol. 34, p. 609. (L. A. B.)

Cobaltinitrites: A Study of and their Application to Analytical Chemistry.—L. L. Burgess and Oliver Kann, University of Illinois, state that the precipitation of potassium as the cobaltinitrite is rendered much more delicate by the presence of silver nitrate, the silver replacing the sodium in the sodium-potassium derivative, forming a much less soluble compound.

One drop of a 25% solution of pure sodium cobaltinitrite ($\text{Na}_3\text{Co}(\text{NO}_2)_6$) produces no precipitate in a solution containing less than 100 parts K per million, while in the presence of 1/10 AgNO_3 a distinct precipitate is produced in a dilution of 1 part K per million.

Ammonia, Cesium, Rubidium, and Thallium combine with Silver to form less soluble salts than the simple salts.

Lead and mercurous mercury also have the property of decreasing the solubility of the alkali cobaltinitrites.—*J. Am. Chem. Soc.*, May, 1912, Vol. 34, p. 652. (L. A. B.)

China Wood Oil: The Refractive Index of.—Louis E. Wise points out that China Wood Oil possesses a refractive index higher than that of any other drying oil and submits a table showing the refractive index of a number of commercial wood oils. The author states that owing to the primitive conditions in the collection and the shipment of

the oil to the coast from the country districts of China, he was unable to get authentic samples.

The index of refraction at 25° C. of the oil ranges from 1.5099 to 1.5186, while that of linseed oil is 1.4810, soya bean oil is 1.4751 and tallow oil is 1.4833; thus gross adulteration of china wood oil can be very readily shown by the use of the refractometer.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 498. (L. A. B.)

Beeswax: The Refractive Index of.—L. Feldstem, in commenting upon the temperature at which the refractive index of beeswax is best taken, advocates the use of 75° C. as the best, as the wax is thoroughly melted at that temperature, and a clear reading obtained.

He also advocates reporting the refractive index at 75° C. instead of at 40° C., as it is unreasonable to report the refractive index at a temperature at which it is an opaque solid, when the actual reading is made on the melted wax.

Feldstem submits a table showing the refractive index of a number of samples of beeswax of known purity, at the temperature of 65° C., 75° C. and 85° C., also a table showing the influence a number of adulterants have on the refractive index of beeswax.

The refractive index of pure beeswax ranges from 1.4398-1.4451 at 75° C., and a temperature correction of .00037 per degree C., is necessary when the reading is taken at other than 75° C.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 498. (L. A. B.)

China Wood Oil: A Method for Examining.—Parker C. McIlhenny states that when china wood oil is dissolved in 99½% acetic acid, and a solution of iodine in 99½% acetic acid is added to it, there is an immediate separation of some solid product. If a petroleum distillate (b. p. below 80° C.) be now added and mixed thoroughly, decanted and the extraction repeated with a second and third portion of solvent and decanted, and the mixed liquids treated in a separatory funnel with water until free from acetic acid, then extracted with a solution of potassium iodide, until the petroleum solvent is free from free iodine, the petroleum solvent evaporated and the residue weighed, the weight of the residue represents fairly accurately the proportion of foreign oils present

in the sample.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 196. (L. A. B.)

Unguentum Zinci Oxidi, Manipulation of Process for.—Thomas A. Egan suggests that the oxide of zinc be triturated with oil of benne, about ten percent, until a smooth paste results, then melt the lard and add it to the resulting paste, stirring the mixture until it is cold.—*Proc. Penn. Phar. Assoc.*, 1912, p. 295. (E. C. M.)

Aqua Caryophylli.—Milton Dunn, Sheffield, Pa., suggests the following formula for a vehicle combining the following advantages:

1. Appreciable therapeutic value.
2. Wide range as a solvent.
3. Freedom from sugar.
4. Not liable to deterioration.
5. Distinct flavor.
6. Agreeability to most people, not being suggestive of ordinary food or drink.
7. Lack of alcohol or other preservative.
8. Easily and quickly manufactured.

FORMULA.

Oil of cloves.....	4 cc.
Tinct. of cudbear.....	50 cc.
Alcohol.....	43 cc.
Purified talc.....	15 grams.
Water to make.....	1000 cc.

Triturate the oil with the talc, and with continued trituration add first the tincture, then 900 cc. of water. Filter, return the filtrate until it comes through perfectly clear. Mix this with the alcohol and add sufficient water through the filter to make 1000 cc.—*Proc. Penn. Phar. Assoc.*, 1912, pp. 296-297. (E. C. M.)

Ergot, a New and Reliable Method for the Preservation of Ergot Preparations.—Paul S. Pittinger and Charles E. Vanderkleed in a series of experiments extending over a year, the results of which are given in the accompanying tables, suggests that by the adoption of the Vacuum method of storing ergot preparations their stability may be retained for a considerable length of time.—*Proc. Penn. Phar. Assoc.*, 1912, pp. 128-133. (E. C. M.)

Hydrastis, the Comparative Alkaloidal Strength of Rootlets and Rhizome of.—To determine the comparative alkaloidal strength of the rootlets and rhizome, Charles H. LaWall made a careful test of a lot of *Hydrastis Canadensis*. The lot weighed ninety-eight pounds and furnished 15.5 pounds of Rhizomes and 48 pounds of Rootlets, the balance being waste. Upon assay the rhizomes assayed 2.48% and the rootlets 1.38%. *Hydrastis* rhizomes are therefore, according

to his analysis, 1.5 to 2 times as rich in hydrastine as the rootlets.—*Proc. Penn. Phar. Assoc.*, 1912, pp. 142-143. (E. C. M.)

Calcii Lactophosphatis, Improved Manipulation of.—Wilbur F. Horn says that the following method of procedure proves more satisfactory than that of the Pharmacopoeia: Mix the Lactic and Phosphoric Acids with one hundred cubic centimeters of water in a capacious vessel, add the precipitated Calcium Carbonate in small portions to the mixture, agitating after each addition, until it is entirely dissolved and effervescence has ceased, add 100 cc. of water, filter through a plain filter, rinsing the container and washing the filter with 100 cc. of water; add the orange flower water, then the sugar, agitate until solution is effected, strain through absorbent cotton; add enough water through the cotton to make the measure 1000 cc.—*Proc. Penn. Phar. Assoc.*, 1912, p. 150. (E. C. M.)

Creosote, Determination of, in Tablets.—Charles E. Vanderkleed and Fritz Heidelberg suggest the following as satisfactory methods for the determination of the creosote content of tablets:

FOR PLAIN TABLETS.

An amount of tablets containing forty to fifty grains of creosote is finely powdered and heated with about 50 cc. of water and 10 cc. strong NaOH solution (1:2) for about one hour on a water-bath. In this time the creosote will have dissolved in the alkaline liquid. (For tablets in which the creosote is present in combination with magnesium a longer digestion is necessary and it is more convenient to shake the powdered tablet for several hours with the NaOH solution.)

The liquid is now transferred into an eight-ounce milk centrifuge bottle, cooled, 50 cc. of benzene added and then enough strong HCl is added slowly to render the liquid acid. The bottle is corked and shaken vigorously for ten minutes and then centrifuged. The upper benzene layer is carefully poured off into a separator, and the shaking with benzene is repeated two or three times, until the last benzene layer is nearly colorless. In case the combined benzene solutions do not amount to more than 70 cc. they can be poured directly into the measuring flask. In case they do amount to more, it is necessary to either concentrate them or to work them up in two portions.

The best plan, however, is to concentrate either by distilling off some of the benzene, in which case it is necessary to add some strong NaOH solution in order to avoid loss of creosote, or to shake the separator with successive portions of 20, 10 and 10 cc. of strong NaOH solution (1:3), adding 50 cc. of benzene, preferably the one which contained the creosote before, and neutralizing the combined NaOH solution by slowly adding strong H_2SO_4 (60%), using methyl-orange as indicator. Shake the separator and let separate completely. Draw off the watery solution which is rejected. In the meantime, place about 20 cc. of strong NaOH solution (1:3) in the measuring apparatus described in Bulletin No. 107, Bureau of Animal Industry, P. 16; with the aid of pipette add 1 cc. of benzene, and take the reading of the NaOH solution carefully. Now pour the creosote solution into the measuring apparatus, through a funnel fitted with cotton moistened with benzene. Rinse out the separator with successive small portions of benzene, and shake the measuring bulb vigorously for five minutes. Let stand for about two hours, rotating occasionally to hasten the separation. In case a slight emulsion occurs, heat gently over water-bath to break the same. After the meniscus is perfectly sharp take the reading and calculate the amount of creosote by multiplying the number of cc. of increase in the NaOH solution by the specific gravity (108). In determining guaiacol the same method can be used with the difference that the number of cc. has to be multiplied by the Sp. Gr. of guaiacol.

For Gelatine-coated Tablets it is better to avoid heating on account of the gelatine of the coating. The powdered tablets are merely shaken with about 50 cc. of NaOH T. S. for several hours, then acidity and treated in the same way as the plain tablets.—Proc. Penn. Phar. Assoc., 1912, pp. 301-303. (E. C. M.)

Morphine, Determination of, in Tablets.—L. Henry Bernegau and Fritz Heidlberg say that "The determination of morphine with accuracy, even in plain tablets of morphine sulphate or hydrochloride, is not an easily accomplished assay. Morphine, being an exception to the rule that alkaloids are soluble in the ethereal solvents usually employed in assaying, precludes the use of the ordinary "shaking-out process." They recommend

the following process for the estimation of morphia in tablets:

An amount equal to about 0.3 grams morphine sulphate is dissolved in water or in 1% sulphuric acid, using as little water as possible. We preferably dissolve the tablets directly in the separator with from 10 to 15 cc. of water; 50 cc. amyl alcohol are added and the liquids in the separator are heated on a steam-bath. When hot enough, sufficient ammonia is added to make distinctly alkaline, using litmus paper as an indicator. Shake vigorously for ten minutes. Cool and draw off into a second separator. Wash out the amyl alcohol with 5 cc. of water and add these to the first watery solution. Filter the amyl alcohol into a 250 cc. Jena flask through a funnel with a cotton plug moistened with amyl alcohol. If the amyl alcohol is not absolutely clear it does not matter, as long as the above outlined precautions are observed. Rinse the remaining contents of the first separator into the second separator with 50 cc. of amyl alcohol, heat again on water-bath and shake for ten minutes. Be sure that the liquids are sufficiently alkaline. After cooling and separating, repeat the shaking-out once more. The united amyl alcohol filtrates are then distilled in a paraffin bath to a small volume. The last few cc. should be evaporated by inserting the flask in a large beaker containing boiling water. A bent glass tube is inserted into the flask in such a manner that it reaches nearly to the bottom, and the air is aspirated through the tube with a water-pump. In this way the last traces of amyl alcohol together with the ammonia liable to be present can be evaporated in a very short time. It is better to take the morphine out of the paraffin bath too soon rather than too late as too long drying in the paraffin bath decomposes the morphine. The recovered amyl alcohol may be used over and over again.

After drying the morphine, about 12 cc. 10/N Sulphuric acid and 20 cc. pure chloroform are added and heated on a water bath until solution of the morphine is effected and the chloroform driven off. Should some of the morphine have escaped solution, add more chloroform. Cool, add a few drops of cochineal T. S. and titrate back the excess of 10/N sulphuric acid. Calculate the amount of morphine:

1 cc. 10/N H_2SO_4 = 0.0376 grams morphine sulphate.

An accuracy to within 0.5% to 1% of the theoretical can readily be obtained by rigidly adhering to this procedure.—*Proc. Penn. Phar. Assoc.*, 1912, pp. 306-307. (E. C. M.)

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Colloids in Medicine.—Prof. Dr. H. Beehold read a highly scientific paper on this subject at the jubilee meeting of the Verein Deutscher Chemiker at Freiburg. Besides colloids and crystalloids and their solutions he also spoke on the ultramicroscope, by which particles of one-one hundred thousandth of a millimeter can be seen, and the ultrafilter with pores of one-five hundred thousandth of a millimeter. The theory of electrolytic dissociation and osmotic pressure has also been utilized in a practical manner in biologic, especially in uric acid diathesis.—*Ph. Post*, 1912, No. 47, 494. (O. R.)

Congress of Pharmacists of Poland.—The first congress of Polish pharmacists was successfully held at Lodz on May 25 and 26, 1912. A great many papers were read and twenty resolutions were adopted, which have to be consulted in the original report.—*Ph. Post*, 1912, No. 48, 509. (O. R.)

Iron: Acid-proof Composition.—Iron alloys containing a certain percentage of chromium are usually used in the manufacture of apparatus which should resist the action of acids, but are not absolutely acid proof. The German metallurgist, Prof. Borchers, of Aix-la-Chapelle, discovered that by the addition of 2 to 5 percent of molybdenum to an iron composition containing more than 10 percent of chromium, an absolute acid proof alloy is obtained. A composition of 35 percent iron, 60 percent chromium and 5 percent molybdenum is unaffected even by hot aqua regia. This alloy has the tenacity of cast iron and can be worked the same. Titanium and vanadium may be used instead of molybdenum, but the latter is preferable.—*Sci. Am.*, 1912, Vol. 107, 191. (O. R.)

Saffron: New Adulterant.—The French expert, Eugene Collin, sent a sample of crocus from Tyrol which, according to his analysis, was adulterated with flowers of *Cynara cardunculus* or *Cynara scolymus*, colored with an azo dye, to Prof. Jos. Moeller, of the pharmacognostic institute of the University of Vienna. Dr. R. Wasicky found that the adulterant consisted of flowers of *Onopordon acanthium*, which were loaded with barium sulphate and colored with a dye, soluble in water but insoluble in benzin. The

article is profusely illustrated and should be consulted for particulars.—*Ph. Post*, 1912, No. 44, 462-464. (O. R.)

Synthetic Remedies, 25 Years.—Dr. A. Liehengruen, in his address as chairman of the Section on medico-pharmaceutical chemistry of the Verein Deutscher Chemiker, at their twenty-fifth anniversary at Freiburg, gave a very interesting account of the evolution of the synthesis of medicaments, which began in 1887 when the constitution of anipyrine was determined, the antifebrile properties of acetanilide were recognized and when the first antipyretic of the aromatic series, namely, phenacetin, was prepared synthetically. (Vide address by Chairman of Historical Section A. Ph. A., at Denver meeting, J. A. Ph. A., October, 1912.) The author deplors the fact that up to the present time we have no definite law between chemical construction and physiological action.—*Ph. Post*, 1912, No. 47, 493. (O. R.)

Medicine Bottles: Return to Pharmacies.—Dr. Schamelhout, at the meeting of the Brussels Pharmaceutical Society, took a new viewpoint by claiming that the pharmacist is in better position to cleanse and disinfect the used medicine bottles than the public. If bottles, once used, were to be destroyed, this would be an economic loss of about one million francs in Belgium.—*Ph. Post*, 1912, No. 7, 81. (O. R.)

Methyl Alcohol: Toxicity.—Dr. Walther Hausmann reviews the literature on this important and timely subject. As early as 1869 Richardson gave out his law that the toxicity of the alkaloids increase according to their molecular weights, which are as follows:

Methyl Alcohol.....	32
Ethyl Alcohol.....	46
Propyl Alcohol.....	60
Isopropyl Alcohol.....	60
Isobutyl Alcohol.....	74
Amyl Alcohol.....	88

The toxicologist, Lewin, however, found that methyl alcohol is more poisonous than ethyl alcohol according to experiments on animals. I. Harnack explains this by the oxidation to formic acid in the organism. Birch-Hirschfeld proved the paralyzing effect of methyl alcohol on the optic nerve. The author reviews the use of methyl alcohol in the industries and also the cases of poisoning in Russia, Hungary, Germany and America.—*Ph. Post*, 1912, No. 30, 317-319. (O. R.)

Filtration of Liquids Containing Very Fine Precipitates: Preparation of Filter.—Shreds of filter paper are ground in a mortar and are mixed with plenty of water. Allow the coarser fibres to subside and pass the turbid liquid through the filter. The filter paper thus prepared will retain very fine precipitates suspended in a liquid, which will ordinarily pass through the filter.—*Sc. Am.*, 1912, No. 26, 579. (O. R.)

Ice Cream: Manufacture by Cold produced Electrically.—The ordinary method of freezing ice cream by ice and salt is a striking example of economic waste, as 100 gallons require one and one-half tons of ice and 800 pounds of salt and neither of them can be recovered, and the ice melts very rapidly. Electricity is now conserving these materials by producing artificial refrigeration for the manufacture of ice cream and the freezers are also driven by electric power. Statistics show that during five years, from 1906 to 1910, the consumption of ice cream in the U. S. advanced from 55 to 100 million gallons annually. During 1911 about 120 million gallons were consumed, an average of five quarts per capita.—*Sc. Am.*, 1912, No. 26, 579. (O. R.)

Horsehair: Detection of Artificial Color and Vegetable Fibres.—To detect artificial color of horsehair, heat with water, alcohol, ether, diluted hydrochloric acid or ammonia water. To detect vegetable fibres add sufficient concentrated sulphuric acid to cover a sample and set aside for six hours in a well-closed vessel. Horsehair is scarcely attacked, but vegetable fibre is quickly carbonized. Another test is to boil a sample with solution of potassium hydroxide, which quickly dissolves horsehair but does not attack vegetable fibre, except turning it brown.—*Ph. Zhalle*, 1912, No. 24, 672. (O. R.)

Quality of Unimportant Drugs.—Puckner, W. A., presents some observations on the unreliability of unimportant medicaments, and points out that the quality of an article or a commodity, in general, is directly dependent on demand and competition. That is, if there is a large demand for an article, and if a considerable number of firms put it on the market, then its quality is likely to be of a high order. On the other hand, substances which are not sold under competition are frequently unreliable and inferior. Puckner calls attention to a number of articles sold as medicine that were found to be distinctly in-

ferior to the quality claimed for them.—*J. Am. M. Assoc.*, 1912, v. 59, pp. 1156-1158. (M. I. W.)

Restricted Materia Medica.—Hynson, Henry P., in commenting on the desirability of a more restricted materia medica from the standpoint of the pharmacist, points out that therapeutic nihilism has had about as much effect on the misuse of drugs as political nihilism has had on the misuse of governmental power. He believes that the enforced, restricted or superficial knowledge of the agents that medical men are using is to be thoroughly blamed for the present unrestricted materia medica, which means an untaught, unlearned and uncertain materia medica accompanied by a reckless and meaningless use of many, if not all, of the materials contained therein.—*J. Am. M. Assoc.*, 1912, v. 59, pp. 1158-1159. (M. I. W.)

Certified Pharmacies.—An editorial (*J. Am. M. Assoc.*, 1912, v. 59, p. 461), discusses the practicability of establishing a standard for certified pharmacies, and points out that while the requirements for such certifications should be carefully considered, the need of a dividing line between the druggist, whose energies are chiefly devoted to the sale of cigars, chewing gum, soda-water, and patent medicines, and the pharmacist, to whom one may safely entrust the compounding of prescriptions, is so urgent that the medical practitioner will look forward to the outcome with much interest. (M. I. W.)

Materia Medica: Teaching of.—Stewart, F. E., believes that it would be a great advantage to those who are teaching materia medica if they could limit the Pharmacopoeia to really useful drugs. But unfortunately there is such a difference of opinion among therapeutists that it would be difficult to accomplish.—*J. Am. M. Assoc.*, 1912, v. 59, p. 1164. (M. I. W.)

Useful Remedies.—Wilbert, M. I., reports on the work of the Committee on Useful Remedies, and states that a list has been compiled and agreed upon by the members of the Council on Pharmacy and Chemistry of the American Medical Association, and will be offered tentatively in the form of a manual for ready reference, with the request that American practitioners generally make such suggestions as will tend to make the final list representative of the best in the materia medica of American medicine.—

J. Am. M. Assoc., 1912, v. 59, pp. 1163-1164. (M. I. W.)

Materia Medica, Teaching of.—Hare, Herbert A., thinks that half the number of hours that are devoted to lectures on materia medica could be more advantageously employed if there were no state boards, because at the present time teachers are forced to teach facts which will not be used in practice merely because they will be used in state board examinations.—J. Am. M. Assoc., 1912, v. 59, p. 1165. (M. I. W.)

Medical Education.—An editorial (J. Am. M. Assoc., 1912, v. 59, pp. 650-654), reviews the report of the Council on Medical Education for the year ending June 30, 1912, and presents a number of tables showing the number of students in attendance and the number of graduates from the several medical colleges during the years 1880 to 1912, inclusive. It also presents a table showing the number of colleges closed since 1904. Of the 65 medical colleges which have ceased to exist, 37 were closed by merger, and 28 became extinct. While the total number of colleges is growing smaller and approaching more nearly the normal supply for the country, it is encouraging to note that the number of high-grade, stronger colleges is constantly increasing. In 1904, only four medical colleges were requiring any preliminary education in advance of the usual high school education; now there are forty-five requiring one or more years of advance college work. The total number of medical colleges in the United States at the present time is 116, a net reduction of 50 from the maximum in 1904. (M. I. W.)

Drugs, Action of.—Wallace, George B., discusses the influence of pathologic conditions on the action of drugs, and points out that the assumption drawn from pharmacologic experiments are frequently misleading to the clinician. He points out a number of instances of differences in drug-action in the healthy and diseased animal, and suggests the importance of enlarging on the field of pharmacologic research so as to include a study of the possible variation in the action of potent remedies.—J. Am. M. Assoc., 1912, v. 59, pp. 839-841. (M. I. W.)

Quality of Drugs.—Kebler, L. F., calls attention to the work that is being done in connection with the Bureau of Chemistry to improve the quality of drugs on the American market. He divides drugs into three classes,

chemicals, crude drugs, and prepared mixtures, such as pills, tablets, galenicals, etc. Chemicals, he states, are, on the whole, of satisfactory quality, while crude drugs are commodities which cause the greatest amount of disturbance. He calls attention to a number of crude drugs that have been found to be below the standard prescribed by the Pharmacopocia, and points out that with the operation of the proviso in Section 7 it is extremely difficult to eradicate adulteration in its various forms. He also states that a considerable number of tablets and pills offered to the trade and to the medical profession direct have been examined and found wanting in certain respects, but concludes that since laboratory work was begun there has been marked improvement in the chemicals, crude drugs and mixtures, though there is room for further improvement.—J. Am. M. Assoc., 1912, v. 59, pp. 1604-1606. (M. I. W.)

Pharmacist, Status of.—Kraemer, Henry, presents some thoughts on the position of the retail pharmacist as a purveyor of pure drugs. He points out the great increase during the past 25 years in the number of drugs that are being used or offered for sale, discusses some of the factors in the improvement of drugs and points out the need for cooperation between pharmacists and physicians in the work of eliminating inert and otherwise objectionable medicaments from the materia medica.—J. Am. M. Assoc., 1912, v. 59, pp. 1599-1603. (M. I. W.)

Drugs, Standardization of.—Sollmann, Torald, in discussing the current problems of pharmacology and therapeutics, points out that the standardization of drugs is a matter which is vital to the progress of therapeutics. Most important at the present moment is probably the progress of pharmacopocia revision and the relation between pharmacists and physicians because its proper solution is essential to applying the drug standards in a satisfactory manner.—J. Am. M. Assoc., 1912, v. 59, p. 833. (M. I. W.)

Patents and Trade-Marks.—Wilbert, M. L., discussing the present status of the law relating to patents and trade-marks, points out some of their shortcomings, and expresses the belief that for the protection of the inventor, no less than for safeguarding the inherent rights of the public, it would appear desirable to simplify the present legal procedure necessary to establish the validity

of a patent and also to extend to patents generally the system of preliminary publication now used in connection with the registration of trade-marks.—J. Am. M. Assoc., 1912, v. 59, pp. 834-835. (M. I. W.)

Patents and Trade-Marks.—Stewart, F. E., discusses the relation of the patent and trade-mark laws to materia medica nomenclature, and suggests that the U. S. Pharmacopoeial Revision Committee issue an annual list of new drugs, giving proper names to them and including trade names as synonyms.—J. Am. M. Assoc., 1912, v. 59, pp. 836-838. (M. I. W.)

"U. S. P. and N. F. Propaganda."—An editorial (J. Am. M. Assoc., 1912, v. 58, p. 640), in commenting on the various efforts to supplement the "Propaganda for reform in proprietary medicines," points out that the "U. S. P. and N. F. Propaganda" of the pharmacists falls short of the ideal in that it merely aims to substitute a ready-made, usually complex and unscientific mixture of known composition, for a ready-made, equally complex and unscientific mixture of unknown composition and may mean that the physicians who previously used certain proprietaries uncritically will be led to use just as uncritically the preparations from which the proprietary was derived. (M. I. W.)

Nobel Prize.—An editorial (J. Am. M. Assoc., 1912, v. 59, p. 1548), points out that the Nobel Prize in medicine for 1912 has been awarded to a member of the staff of the Rockefeller Institute for Medical Research in New York. Alexis Carrel, who brings this honor to American medicine, was born in France in 1873 and graduated as doctor of medicine from the University of Lyons in 1900. Shortly afterward he came to this country and worked for a year or two in the physiologic laboratory of the

University of Chicago, where he accomplished remarkable results in the suture of blood-vessels, and began his work on the transplantation of organs. Soon after the opening of the Rockefeller Institute for Medical Research in New York he joined its staff, and it is there that he has done the work for which he now receives the Nobel Prize. (M. I. W.)

Candy Medication.—Fantus, Bernard, suggests the use of candy tablets, particularly for insoluble and tasteless substances such as calomel, yellow iodide of mercury, arsenic trioxide, tartar emetic, nitroglycerin, elaterin, and scopolamine. For 100 tablets of a substance whose dose is to be 1-100 grain, each tablet to weigh 3 grains, the following formula may be used:

Active ingredient.....	1 grain
Cacao butter.....	9 grains
Powdered sugar.....	290 grains

Talcum, not to exceed 3 percent, may be added to prevent sticking of the tablets to the punches. This addition is not necessary when the tablet contains a considerable amount of insoluble powder.

The ingredients are thoroughly triturated and then compressed in the tablet machine. The 3 percent of cacao butter, as suggested by Schleimer, admirably serves the purpose of a cohesive agent for prescription quantities of tablets.—J. Am. M. Assoc., 1912, v. 59, pp. 842-844. (M. I. W.)

Atropine, Use of.—Mosenthal, Herman O., reports some observations on atropine therapy in diabetes mellitus and concludes that he could observe no indication that atropine sulphate effects any change in the carbohydrate tolerance of sufficient importance to make the drug of clinical value in the treatment of this disease.—J. Am. M. Assoc., 1912, v. 58, pp. 777-778. (M. I. W.)

THE SPIRIT OF RESEARCH.

It has often been said that research is an attitude of mind. This is something different from the mysterious features which are sometimes attributed to it. The spirit of research is attainable, even if at times it seems remote. Quoting Donaldson: "A man may have little leisure and trifling resources, and may never have published; but if he examines the world in a questioning spirit, if he carries with him not only conclusions, but the observations on which they rest, if he refuses to pound square facts into the round holes that he happens to have in hand, he has attained illumination."—*Journ. A. M. A.*

Of General Interest

NEW ENGLAND LETTER.

ERNEST C. MARSHALL, Boston.

Those members of the A. Ph. A. who have read the interesting story of Mary Antin's amalgamation into American citizenship as told in her most interesting story, "The Promised Land," would doubtless fail to recognize, unless familiar with Boston pharmacies, her description of "Mr. Pastor's showy drug-store at the corner of Washington and Dover Sts.," as the establishment of our esteemed fellow-member and erstwhile Treasurer, Mr. S. A. D. Sheppard. The incident she relates of his kindness to her in her great distress of mind, is so like our good friend that the mental picture which she draws of him is easily recognizable by all who know his genial, kindly heart and sympathetic nature. But in reading the story the query rises,—From whence did she derive the name "Pastor"? The use of this name could not have been because of the desire not to use the true name, for her book is full of instances of the use of them: Edward Everett Hale, Mr. Hurd of the Transcript, Mr. Swan and others, and only in this one case apparently does she give a pseudonym. I wondered in thinking of the matter if "Sheppard," in Yiddish or in Hebrew, had any connection with the word "Pastor," but I cannot find upon investigation that it has, and therefore I conclude that Miss Antin must have been mistaken in the name.

Of course, the incident she relates regarding her kindly treatment in this store, is not an unusual one; it probably occurs in some store in every city almost weekly with a like setting and result. But it is gratifying to observe by such an account as this what such an act means to the poor person, who, timid and frightened from previous experiences with arrogance and unkindness, bears away with lightened heart, not only the restoring medicine, but kindly sympathetic words, even though they be expressed in the sentence, "Look out for wild Indians." A

trifling incident truly, but like the little candle's beams, "So shines a good deed in a naughty world." With its feeble light it emanates a great and glowing radiance by which others may be guided and from which may come that which will be like the bread that returned "after many days."

Men have different ideas regarding the conduct of business and the antithesis of the Mary Antin incident is shown by another case. A man, not a druggist, I am glad to say, said to me the other day, "You can't succeed in life without being dirty, and I don't propose to be unsuccessful." I wondered if that man could by any possibility realize the import of what he was saying; the picture which he drew of himself? To be "successful" in the world he would be "dirty,"—would do mean things: would degrade himself; make his word untrustworthy and faithless. And I fear that there are others like this man who seem to accept this idea as a guide for themselves in the conduct of their lives, and these, too, not always the rude and uncultivated. A man occupying a high official position in this state is accused of being one whose word cannot be trusted and he is a most successful man. What manner of man is that which Dean Archer of the Suffolk Law School portrays, and yet this man aspires to be termed "Your Excellency"! How must the shades of the honorable and gentle men grieve, as they look down from above upon their successor in the chair of Andrew and of Wolcott, at this misfit occupying the place they dignified. Out upon such doctrine! How it contrasts with the dying words of Scott to Lockhart, "My dear, be a good man, be virtuous, be religious, be a good man. It is the only thing which will bring you comfort when you come to lie here," or with the creed of one man who says for his daily guide:

"I would be true, for there are those who trust me;

"I would be pure, for there are those who care;

"I would be strong, for there is much to suffer:

"I would be brave, for there is much to dare:
"I would be friend to all,—my foe; the friendless:

"I would be giver and forget the gift:

"I would be humble, for I know my weakness:

"I would look up and love and laugh and lift."

The Commencement and Class Day Exercises of the Massachusetts College of Pharmacy occurred on Thursday, May 15, with President C. Herbert Packard presiding. The order of exercises was:

Prayer, by Rev. A. R. Williams.

Address, by Mr. Charles Zueblin, "Science and the Sciences."

Presentation of Candidates for the Degrees, Dean, Theodore J. Bradley.

Calling of the Roll, Secretary Lyman W. Griffin.

Conferring of the Degrees, President C. Herbert Packard.

The Degree of Phar. D. was conferred upon 35 students, and that of Ph. C. upon 8 students.

At the conclusion of the Commencement Exercises the Annual Dinner of the M. C. P. Alumni Association took place, with President Acheson presiding. This dinner was entirely informal and no set speeches were given. At 8:30 o'clock the Class Reception and Dance occurred at Horticultural Hall, for which the Salem Cadet Band furnished the music. Dancing was continued until one a. m., when the exercises of the day ended.

CONNECTICUT.

Fairfield. R. E. Randall of Torrington is fitting up the corner-store in the Freeman Building as a pharmacy, and expects to open the same about the time of our going to press.

New Haven. Charles Hull has purchased the drug store of John Alling at 141 Dixwell avenue. Mr. Hull for many years managed the Wilson Pharmacy and later was with A. F. Wood's Sons.

Manchester. Samuel Nelson opened a modern pharmacy on the nineteenth ult. in the corner store of the Odd Fellows' block, on the corner of East Center and Main Sts. The prescription department will be in charge of Elmore C. Packard, formerly of

the Grant Pharmacy. The fountain is from the Lippincott Co.

James Magnell of Rockville succeeds E. C. Packard as druggist at the Grant Pharmacy.

Hartford. Robert Rubin is to open a drug store at No. 99 Connecticut Boulevard, which will be the only pharmacy in its entire length.

Carl Sheldrick, recently of the Godwin Drug Store, and Paul A. Alderman, formerly connected with Goodwin's, are to open a store at the corner of Main and Pearl Sts., in the premises recently vacated by the Conn. River Banking Co.

Waterbury. "The Brown Druggists" are enlarging their store on East Main St. by removing their prescription department to the second story of the building, giving them about twenty feet of added floor space in their main store. Mr. Brown has recently purchased the Buckingham Pharmacy, corner of Bank and Grand Sts. and will refit the same.

MAINE.

Bath. Harry M. Wilshire, formerly of Gorham, has opened a drug store which he proposes to make a first-class pharmacy in every respect.

Belfast. The Old Corner Drug Store in Pythian Block has been recently greatly improved by the addition of plate-glass windows and a general overhauling which makes it one of the most up-to-date pharmacies of the city.

Biddeford. Henry D. Cosgrove and Belle E. Breslin of Maplewood, Mass., were joined in marriage on April 10 last at Southern Pines, N. C. They will make their home in this city, where the groom is associated with his father in business.

Machias. Rufus Trussel Crane, probably the oldest druggist in Maine at the time of his decease, passed away at his home on the twenty-third ult. at the age of 81 years 2 months and 3 days. For fifty-five years he was actively engaged in the drug business in this town, and had been for several years a member of its Board of Selectmen. He was a member of Harwood Lodge, F. & A. M., and of Washington R. A. Chapter. His widow and two children survive him, Edna, the wife of Arthur W. Bowker, a prominent druggist of Brookline, Mass., and Frank T., who carries on the business established by his father in this town.

McAdam. William Logan is preparing to

open a pharmacy in this town at an early date.

Portland. Elmer W. Parker has been taken into partnership by his father and the firm will be known as George H. Parker & Son.

Rockland. Lachance & Leighton have dissolved partnership, Mr. Edward B. Leighton retiring on account of ill health. Mr. Fred J. Lachance will continue the business, with J. H. Wiggin as prescription clerk.

The forty-sixth Annual Meeting of the Maine State Pharmaceutical Association will occur at Portland on June 24, 25 and 26. A large attendance is expected at this meeting.

MASSACHUSETTS.

Andover. Franklin H. Stacey, Ph. G., has purchased the W. A. Allen store and will combine the business of his former location with that of Allen business in the store formerly occupied by the latter.

Boston. Two old-time pharmacists passed away in this city the first week of the month. Samuel A. Neill died on May 4, and Charles A. Miller on May 5, both at the age of 63 years. Mr. Neill was prominent in the wholesale business and Mr. Miller was a retail druggist, long in business in Roxbury.

Mr. James F. Finneran, President of the Woodward Drug Co., has been confined to the house during the past month with a threatened attack of appendicitis.

Fitchburg. The clerks of the Fitchburg Drug Co. entertained their friends on the evening of April 21 at a social dancing party. About twenty couples were present and a most enjoyable evening was passed by all those who participated in the function.

Trustee Henry W. Estabrook of the College is one of a Committee of three appointed by the Citizens' Committee of 100, to frame a new charter for the city.

Lowell. The contract to supply drugs to the city dispensary was awarded to Falls & Burkinshaw, who were the lowest bidders in a field of four competitors. Not the best way to secure the best drugs.

Salem. Frederick E. Bigelow has opened a new store at the corner of Lafayette St. and West Ave. Mr. Bigelow was for fifteen years a clerk for George N. Harris, at the corner of Leach and Lafayette Sts.

Taunton. The Drug Clerks' Association has elected the following officers for the en-

suing year: President, James Gilchrist; Vice President, Walter Gorham; Secretary, Elmer Clapp; Treasurer, Joseph L. Welch.

Worcester. H. A. Burdett, one of the oldest druggists of Clinton, has closed his store and entered the employ of H. L. Green of this city.

Pittsfield. Charles I. McCarty has purchased an interest in the Melville Pharmacy on North St., and will assume charge of the drug department of that corporation.

Stonham. Mr. Ralph R. Patch of the E. L. Patch Co. reports the arrival of "the stork" at his home with a welcome burden of a seven-pound suffructette. Mother and babe are in the best of health and spirits.

NEW HAMPSHIRE.

Franklin Falls. Rodney A. Griffin has purchased the interest of Mrs. Ada A. Jackman in the Jackman & Griffin store and will conduct the business on his own account.

Wolfeboro. Joseph Robins, a druggist of this town for thirteen years, has given up business here and removed to Lynn, Mass., to enter the employ of Riker-Jaynes Company.

RHODE ISLAND.

Pascoy. Edward Cunningham of Malone's Pharmacy has purchased a drug store in Providence.

Providence. Thomas Grady's drug store was burglarized on April 16 and a small amount of cash and goods was taken. From appearances the work was that of amateurs in the business.

Olneyville. Byron Smith has recently refitted his store.

VERMONT.

Brandon. The meeting of the Vermont State Association will take place at this beautiful town in June and a large gathering is expected to be present. Brandon is noted for its quarries of statuary marble and is a very attractive summer resort.

Burlington. The Vermont Board of Pharmacy has reorganized by the selection of D. F. Davis as President, M. G. Beebe as Secretary, E. G. MacChallen, Treasurer. The other members of the Board are W. L. Gokay and W. F. Root.

Rutland. Lucian J. Trudel reports regarding propaganda work in that locality that its results have been fairly good.

The Pharmacist and the Law

SCOPE AND APPLICATION OF THE FEDERAL FOOD AND DRUGS ACT.

In the May issue of the JOURNAL (p. 646) there was published a discussion of the recent decision of the United States Supreme Court interpreting the scope and application of the Federal Food and Drugs Act of June 30, 1906, by Charles Wesley Dunn, Esq., of the New York Bar.

Mr. Dunn desires to supplement his former remarks by the following:

I have received so many letters of inquiry relative to the Wisconsin decision that I find the effect thereof is not generally understood.

It must be borne in mind that the Supreme Court expressly reaffirms the doctrine established in the case of *Savage v. Jones*, 225 U. S. 501. It is necessary to read these two decisions together in order to correctly understand the attitude of the court.

As stated in the analysis sent you the court only condemns such state laws as frustrate or interfere with the operation of the act of Congress. The question naturally arising is—when does a state law frustrate or interfere with the National law? What is the practical application of this general doctrine? *Will any difference between a state and national law constitute such a conflict as will be condemned?*

Let us examine the facts in the two decisions in point.

In the *Savage* case above referred to the Indiana Feeding Stuffs law was in issue. This law required a statement of the ingredients contained in the feeding stuffs offered for sale and sold in Indiana. In the Federal Food and Drugs Act Congress has not required the statement of the ingredients, except in specific instances where morphine, etc., are present. Congress has therefore limited the scope of its requirements. That which the Indiana law required is not included in the National law. The court asks: "Can it be said that Congress, nevertheless, has denied to the State, with respect to the feeding stuffs coming from another State and sold in the original packages, the power

the State otherwise would have to prevent imposition upon the public by making a reasonable and non-discriminatory provision for the disclosure of ingredients, and for inspection and analysis?" The court further remarks: "Undoubtedly Congress, by virtue of its paramount authority over interstate commerce, might have said that such goods should be free from the incidental effect of a state law enacted for these purposes. But it did not so declare."

The court holds that the fact that Congress has not required the ingredients to be declared, has seen fit to circumscribe its legislation and to occupy a limited field cannot lead to the conclusion that Congress intended to supersede the exercise of the police powers by the State as to matters not covered by the Federal legislation. Such an intent cannot be implied unless the Act of Congress is in actual conflict with the State law.

The test is—the repugnance or conflict must be direct and positive, so that the two acts, National and State, cannot be reconciled or consistently stand together.

Applying this test to the facts the court finds that the Indiana Statute is valid, that the additional requirements are not in any way in conflict with the Federal act. That the State law can be sustained without impairing in the slightest degree the operation and effect of the Federal law. There is no question of conflicting standards or of opposition of State and Federal authority.

In the Wisconsin Corn Syrup cases, recently decided, the label in issue had been expressly approved as a proper and legal label under the Federal law. The Wisconsin law declared the label so expressly authorized under the Federal law unlawful and prohibited the sale of this product so labeled by expressly providing that this product could only be sold or offered for sale by bearing its exclusive label. The conflict between the National and State regulations is direct and positive and the two could not stand together, for, if the Wisconsin Statute is valid, then the label, legal under the Federal act, is illegal under the Wisconsin act when the product is sold or offered for sale in Wisconsin, though still in interstate commerce when so sold or offered for sale.

Let us take an illustration clearly showing a conflict which is direct and positive.

The Federal act permits the use of ben-

zoate of soda in catsup, or any food, if properly labeled to indicate that fact. Assume that the State law prohibits the sale or offering for sale of food containing benzoate of soda. Catsup containing benzoate of soda is shipped in interstate commerce to a retailer in a state who places the bottles of catsup on his shelves for sale at retail, properly labeled to conform to the Federal law. Can the State law prohibit the sale of this catsup? The answer must be no. The State and National regulations are surely in direct and positive conflict and to sustain the validity of the State law would mean the absolute denying to the retailer the legal right to sell this catsup, although it is still in interstate commerce, subject to and conforming to the act of Congress.

A conflict in standards of purity affords an open and shut example of a direct and positive conflict.

In considering the various differences in the labeling requirements the distinction or conflict is not always so clear.

Let us take for the purpose of illustration the net weight laws applying to drugs. The Federal Act is silent in this respect, making no requirement that the net contents be declared on the label. The New York Law, Chapter 80, Laws of 1912, requires such a statement in the case of all drugs—except as exempted—sold or offered for sale in New York. It cannot be doubted that the State of New York, assuming that there is no conflict with the National law, is entitled, in the exercise of its police power, to require such a statement. Such a situation appears to be on all fours with the situation disclosed in the Savage case, above. It can hardly be maintained that the two acts, National and State, cannot be reconciled and cannot consistently stand together. If the net contents is stated as required by the State law there will be no violation of the Federal law or no overriding of any express provision contained therein.

Turning now to the Gould amendment of the National law, requiring food to be labeled with a statement of the net contents. Congress has expressly provided that no penalty of fine, imprisonment or confiscation shall be enforced for a violation of these provisions as to domestic products prepared prior to 18 months after the passage, to wit, September 3, 1914.

Assume that various packages of Quaker

Oats, for example, are shipped in interstate commerce to a retailer in North Dakota. The North Dakota law requires that the net contents be declared in the case of food sold in that State. The packages of Quaker Oats are not labeled to indicate the net contents. Is the State law invalid as a law in conflict with and repugnant to an act of Congress, in the light of the decisions of the court?

The distinction in this instance is not so apparent as in the illustrations given above.

Let us examine the situation. The National law requires the statement of the net contents as also the North Dakota law. So far as the affirmative requirements are concerned the laws are in harmony. While the North Dakota law is now in force and effect, Congress has declared that no penalty of fine, imprisonment or confiscation shall be enforced for any violation of the provisions of the Federal law as to domestic products until September 3, 1914. Is the repugnance or conflict so direct and positive that these two laws, National and State, cannot be reconciled or consistently stand together? Can it be said that Congress has denied to the State the power the State would otherwise have to regulate the sale of foods? Congress has not expressly declared that such goods shall be free from the incidental effect of a similar state law. Did Congress intend by virtue of this exemption to supersede the exercise by the State of its police power.

Congress creates a situation which for practical purposes is on the same footing as if there were no Federal law prior to September 3, 1914. Congress has acted but postpones the enforceable application of its enactment for some eighteen months. *Congress has expressly declared that the law enacted under its Constitutional power shall have no legal force for some eighteen months.* There can be no question that on and after September 3, 1914, the North Dakota law will be valid. Can it be said that during the interim the State law may be declared invalid as a conflicting law? The North Dakota law, if enforced, does not impair the operation of any affirmative provision of the Federal law. Making the same requirement these two laws can consistently stand together. The North Dakota law, therefore, is within its legitimate power and valid.

ABSTRACTS OF LEGAL DECISIONS.

INFRINGEMENT OF PATENT—JURISDICTION.

In a suit for injunction to restrain the infringement of the complainant's patent for an improvement in acetyl-salicylic acid, known in pharmacy as "aspirin," it appeared that the defendant conducted a mail order business. He resided in Windsor, Canada, from which place he solicited orders in the United States, and he there received orders and remittances in payment therefor, but all his goods were kept in a warehouse in Detroit, Michigan. He imported goods in bond to Detroit and paid the duties there. This warehouse was in charge of an employé who received and stored and cared for all goods, and on instructions from defendant filled all orders and made all shipments. It was held that the defendant had "a regular and established place of business" in Detroit, and that his employé in charge there was his "agent engaged in conducting such business" within the meaning of section 48 of the Judicial Code. Where he sold and had shipped from his warehouse articles alleged to infringe a patent, he was subject to suit for infringement in that district under said section by service on his agent. Preliminary injunction was granted.

Smith v. Farbenfabriken of Elberfeld Co.,
C. C. A., 203 Fed. 476.

MISTAKEN SEIZURE—REVIEW AFTER FIVE YEARS DELAY.—In 1899, George Leuders & Co. imported a case of chemical compound under the name "Citroline," which was claimed by the appraisers to have been undervalued. They alleged that the merchandise was in fact "Ionone," a patented product then owned by Haarman & Keiner, which, mainly, if not entirely by reason of the patent, commanded a much higher price than "Citroline." A suit was then pending by Haarman & Keiner against George Leuders & Co. for infringement of the patent in which it was subsequently held that Citroline was not Ionone nor an infringement. Some years before the action was decided the case of Citroline had been seized, forfeited, and sold for undervaluation. It is now held that under these circumstances a delay of five years after the sale is not such laches as to debar the importer from maintaining a libel of review to reclaim the net

proceeds of the property, which still remained in the registry of the court, the government having suffered no loss because of the delay.

United States v. One Case Chemical Compound, 203 Fed. 63.

TRADE-MARKS AND TRADE-NAMES. In a bill for an injunction to restrain the defendant from using the word "Telinko" as the name of a bitter wine, it appeared that J. Hollander gave A. Hollander permission to manufacture and sell wine according to a certain formula under his trade-name and trade-mark of "Telinko," but he did not give him an exclusive right nor part with his original rights. It was held that the registration of the trade-mark by A. Hollander could not deprive J. Hollander of his right to subsequently use the formula and trade-name, though the latter had gone out of business for a time, but without abandoning his rights.

Friedman v. Hollander Bros. Drug Co.,
Pennsylvania Supreme Court, 86 Alt. 194.

SALE OF NARCOTICS. Under Georgia Penal Code, 1910, section 459, one who sells morphine to another, not on the order or prescription of a licensed physician, dentist, or veterinary surgeon, is guilty of a misdemeanor, without reference to whether the seller be the proprietor of a drug store or merely the employé of such a proprietor. An instruction to the jury by a trial judge embodying this principle of law is held not to be subject to the criticism that it was argumentative, or contained an expression of an opinion, or was misleading or confusing.

Oppenheim v. State, Georgia Court of Appeals, 77 S. E. 652.

"FOOD" HELD TO COVER NON-ALCOHOLIC DRINKS. In proceedings under the Missouri Food and Drugs Law (Rev. St., 1909, sections 6592-6605), the defendant was charged with having in his possession, with intent to sell, a bottle filled with soda water, which was adulterated with saccharin, and with having in his possession, with intent to sell, a bottle filled with soda water, which was misbranded by having blown thereon the words "Phos-Ferrone Mfg. Co." The defendant's contention that the statute did not cover non-alcoholic drinks was not sustain-

ed. Section 6593 provides: "The term 'food,' as used in this article, shall include all articles used for food, drink, confectionery, or condiment by man or animal, whether simple, mixed or compound."

State v. Fief, Missouri Supreme Court, 151 S. W. 1133.

LIABILITY FOR INJURIES FROM BOTTLE EXPLOSION. Action was brought by an employé of a railroad news company against the company and a soft drink manufacturing company for the loss of an eye caused by the explosion of a soft drink bottle. The plaintiff had been supplied by the news company with several bottles of soft drinks, which were kept in an ice box in the smoker of the train on which he ran. After selling some fruit, he went to the ice box to get some of the bottles. Just as he raised the lid one of the bottles exploded, a piece of glass striking him in the eye, destroying the sight. He did not see what kind of a bottle it was that exploded, but it was a soft drink bottle. It was not seriously contended that there was any evidence to show negligence on the part of the news company. The negligence alleged on the part of the manufacturing company was in selling and delivering to the news company soft drinks in bottles too heavily charged or improperly charged or filled.

It was held that, in the absence of any direct testimony, or any fact or circumstance from which it could be reasonably concluded that the manufacturing company knowingly used defective bottles, it could not be held liable on that ground, even though the bottle which injured the plaintiff was defective, which the proof in the case utterly failed to show. The accident might have happened in one of several ways. The day was very hot, and the explosion might have resulted from the hot air coming in contact with the bottle. A piece of ice might have fallen against the bottle and caused it to explode; or the explosion might have occurred because the bottle was too heavily charged, or the bottle itself was defective. The evidence being equally consistent with any of

these views, it followed that the plaintiff had failed to make out his case, and the defendants could not be held liable.

Stone v. Van Noy Railroad News Co., Kentucky Court of Appeals, 154 S. W. 1002.

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ABSTRACTS OF U. S. TREASURY DECISIONS.

(T. D. 33192—G. A. 7432.) **BROMINATED INDIGO PASTE**—DUTIABLE AS COAL TAR COLOR. Protest was made against the assessment of duty on merchandise described on the invoice as "indigo in paste," "Ciba Blue G paste" and "Ciba Blue G D paste." The article consists of a combination of bromine and chlorine with synthetic indigo, and is used in dyeing cotton, wool and silk. The Board of General Appraisers hold that it was properly held dutiable as a coal-tar color under paragraph 15, tariff act of 1909, and not as indigo paste, that term being limited commercially to an indigo treated with sulphuric acid.

(T. D. 33377.) **ESSENTIAL OILS.** Oil of cypress, oil of cloves, oil of cardamom, and oil of pennyroyal, obtained by processes of distillation applied to the leaves or other natural forms of the cypress, clove, cardamom or pennyroyal plants, are held dutiable *co nomine* as essential oils under paragraph 3, tariff act of 1909, in which a specific description of them appears.

National Aniline and Chemical Co. v. United States, U. S. Court of Customs Appeals.

(T. D. 33357, 33359.) **ALIZARIN ASSISTANT AND CASTOR AND OTHER OILS.** Appeals have been directed by the Treasury Department from the decisions of the Board of General Appraisers of March 26, 1913 (T. D. 33304), involving the classification of so-called alizarin assistant, and of February 28, 1913 (T. D. 33263), involving the classification of clove castor and other oil, the percentage of castor in the combination being 72 percent.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

A CORRECTION.

The Editor is advised by Prof. W. A. Puckner that the article "Prescription Fakes and Health and Beauty Talks," published in the May issue (p. 619), which was reprinted from the *Kansas State Board of Health Bulletin*, and credited to that publication, first appeared in the *Journal of the American Medical Association*. The Editor hereby tenders his apologies for the error in giving credit.

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M. I. WILBERT RESUMES WORK.

Mr. M. I. Wilbert, Assistant Pharmacologist in the U. S. Public Health Service, who has been seriously ill for some weeks, has recovered sufficiently to resume work at his desk in the Hygienic Laboratory, Washington, D. C.

Mr. Wilbert is one of the most indefatigable, as well as one of the most careful and conscientious workers in American Pharmacy, and the members of the A. Ph. A. will be universally pleased to learn of his restoration to normal health.

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A. PH. A. MEMBERSHIP PRIZES.

The following college prizes, consisting of nominations to membership in the A. Ph. A. and payment of the first year's dues, have been reported to the General Secretary. The latter will be pleased to receive notification of any other awards made this year:

St. Louis College of Pharmacy:

To Clarence Earl Armstrong, of West Plains, Mo.

Brooklyn College of Pharmacy:

To Israel Schwartz, of the Post-Graduate Class, and Joseph Caruso, of the Senior Class.

Philadelphia College of Pharmacy:

To Cyrus T. Gilbert, for the best term average in Theoretical Pharmacy during his Senior year.

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SERGEANTS OF THE HOSPITAL CORPS BANQUET.

The mobilization of troops of the Second Division at Galveston and Texas City, and the presence in the harbor of four United States transports, has been the occasion of several unusual gatherings among officers and enlisted men. Another of these "get-to-

gether" affairs occurred Saturday evening, May 18 at the Elite cafe when twenty-seven first-class sergeants of the hospital corps were present at a stag dinner. It is said that this is the largest number of first-class hospital corps sergeants that have ever gotten together; fifteen were assembled at San Antonio in 1911 and ten or twelve three or four years ago in the West. There are but 300

Galveston; H. Meade, Nineteenth Infantry, Galveston; F. H. Simons, Twenty-eighth Infantry, Galveston; C. N. Shaw, Eleventh Infantry, Texas City; M. Heatherly, Eleventh Infantry, Texas City; W. L. Luse, Eighteenth Infantry, Texas City; C. H. J. rice, Twenty-second Infantry, Texas City.

From Fort Crockett—E. Stephenson, Post Hospital, Fort Crockett.

From Base and Port of Embarkation—Holland, Medical Supply Depot, Galveston.

From Transports—M. Kelly, Kilpatrick; M. Weinberg, Meade; I. Hopkins, McClellan; A. F. Hare, Sumner.



CHICAGO BRANCH ANNIVERSARY.

On the occasion of its seventh anniversary the Chicago Branch issued a very attractive prospectus in the form of a four-page folder, the matter of which, though not the style of typography, is represented below. The example is one which might be followed with profit by other A. Ph. A. Branches:

"Pharmacia vera Prevalebit." The American Pharmaceutical Association, Chicago Branch; organized February 13, 1906. Our Seventh Anniversary.

The Chicago Branch of the American Pharmaceutical Association is seven years old, though these seven years do not represent the age of infancy, for the Branch sprung into being a well-developed organization.

Under the leadership of pharmacists of such fame as Hallberg, Oldberg, Eliel and Ebert, the Branch was organized February 13, 1906, with a membership of 56. Within one year the membership had trebled, and during the seven years 250 names have been added to the roll.

Since its inception 60 years ago, the American Pharmaceutical Association has held as its object the advancement of the science and art of pharmacy and the improvement of pharmaceutical practice. The Chicago Branch has consistently endeavored to uphold this declaration of the parent association, as the record of these seven years fully proves.

Among the important principles discussed and advocated by the Branch, or the move-



H. W. RIESS, Sgt. 1st Cl., 11. C., U. S. A.

sergeants of this rank in the United States Army and they are scattered throughout this country and island possessions.

Those attending the dinner were:

From Second Division—H. W. Riess, C. S. O., Second Division, Texas City; Y. L. Bowers, Sixth Cavalry, Texas City; W. E. Crampton, Fourth Field Artillery, Texas City; E. M. Pennypacker, Second Battalion Engineers, Texas City; H. Killikelly, ambulance company, Texas City; O. V. Everett, ambulance company, Texas City; H. Nicklen, field hospital, Texas City; A. Bednarski, field hospital, Texas City; E. Burke, field hospital, Texas City; B. Hardenbrook, field hospital, Texas City; C. S. Elliot, Twenty-third Infantry, Texas City; W. E. Whelan, Twenty-sixth Infantry, Texas City; P. O'Brien, Twenty-seventh Infantry, Texas City; F. O. Nicodemus, Fourth Infantry, Galveston; C. A. Aldridge, Fourth Infantry,

ments successfully undertaken by it, may be enumerated the following:

1—The Advancement of Pharmaceutical education by:

(a) Higher preliminary educational requirement of candidates for examination by the Illinois Board of Pharmacy.

(b) Inclusion of time spent in schools of pharmacy in the practical experience required of registrants.

(c) Graduation from a school of pharmacy as a prerequisite before registration.

2—Better Relations Between Physicians and Pharmacists:

A declaration on the prescription which originated in the Branch, was revised by a joint committee from the American Medical Association and the Branch, and was adopted by these and other medical and pharmaceutical associations of Chicago, as follows:

"First. The prescription is an utterance of the prescriber, who alone should direct and control its employment. It should, whenever practicable, carry the name of the patient, the patient's age in years, if a minor, and the date when the prescription was written."

"Second. The pharmacist who prepares the medicine should retain the prescription as a record for a certain limited period, not less than five years, for the protection of the prescriber, himself and the patient." (This principle has since been incorporated into the Illinois Pharmacy Law.)

"Third. The medicine prescribed should be supplied not more than once on the same prescription: (1) if ordered by the prescriber 'not to be repeated' (non-repetitur); (2) if containing medicinal substances commonly called narcotic or habit-forming drugs; (3) if called for by some person known not to be the original holder."

"Fourth. A copy of the prescription may be supplied and should be written on a special blank, containing a declaration that it is a copy of a prescription which has been delivered to the original holder, and is not to be refilled except on order of the prescriber, and that the copy is made without recourse to possible error."

The propaganda for the prescribing by physicians of U. S. P. and N. F. preparations, and the crusade against the use of nostrums in prescriptions, were materially advanced by the Branch. The Physicians' Manual of the U. S. P. and N. F. was compiled by Prof. C. S. N. Hallberg and published and distributed by the A. M. A. An exhibit of some 200 U. S. P. and N. F. preparations was prepared by members of

the Branch and displayed at the 1908 national convention of the A. M. A. The dispensing physician and prescribing pharmacist evils have received extensive discussion, with the presentation of several suggestions for their cure.

3—The Revision of the National Standards in Pharmacy:

The U. S. P. IX and N. F. IV have received much attention, many meetings having been devoted to the discussion of changes in formulae and the introduction of new remedies in these standards. The history of, pharmacopoeial revision and of the national formulary, as well as the progress of the present revision of each, has been presented. Among the members of the Branch who are members of one or the other revision committees are: Dr. W. A. Puckner, Professor A. H. Clark, Wilhelm Bodemann, Professor H. M. Gordin, Prof. C. M. Snow. Mr. F. W. Meissner, a member of the Branch, is a member of the board of trustees of the Pharmacopoeia.

4—Laws Affecting Pharmacy:

Much attention has been given by the Branch to proposed new laws, both national and state, relating to pharmacy, and particularly to obtaining desirable amendments to the Illinois Pharmacy Law. Such amendments relating to more advanced requirements for registration, to more complete suppression of the narcotic drug evil and to pure and standard drugs have been strongly advocated by the Branch.

5—Pharmaceutical Practice:

The Committee on Pharmaceutical Practice has been very active, and a number of profitable meetings have been devoted to New Formulas, New Remedies, Improvement of Old Formulas, Working Methods, etc.

6—The Drug Business:

Various phases of the commercial side of pharmacy have been ably discussed by representative men before the Branch. Among such topics may be mentioned "Early and Sunday Closing," "Profitable Side Lines," "Why Some Druggists Don't Make More Money," "The Building-Up of a Drug Business."

Finally, the social side has not been neglected. Several pleasant entertainments have been presented, and the warm handshake and social converse are a feature at

each meeting. A number of ladies are constant attendants at the meetings, and "ladies' nights" are frequent. From time to time men of note have addressed the Branch on subjects of great pharmaceutical or popular interest, among whom may be mentioned Prof. Henry H. Rusby, Dr. Jenkin Lloyd Jones, Prof. John Uri Lloyd, Dr. James H. Beal, Dr. George Simmons, Dr. Andrew Winton, Dr. Lyman F. Kebler, Mr. Harry B. Mason.

This record of good achievement back of us, our present strong membership and the well-laid plans for further work promise not only that the future meetings and activities of the Branch will be very interesting, but also of great practical value to those interested in pharmacy.

All persons who desire to promote the progress of pharmacy and who reside in or adjacent to Chicago are urged to unite with us. This includes especially retail pharmacists, wholesale and manufacturing pharmacists, pharmaceutical teachers, editors and writers, food and drug law officials, etc. Membership in the Branch involves no obligation further than membership in the parent association.

OFFICERS SINCE THE ORGANIZATION OF THE BRANCH.

PRESIDENTS.

Oscar Oldberg.....	1906-1909
C. A. Storer.....	1910-1911
Jas. H. Wells.....	1912-1913

FIRST VICE-PRESIDENTS.

Herman Fry.....	1906
W. K. Forsyth.....	1907
E. H. Ladish.....	1908
C. A. Storer.....	1909
E. N. Gathercoal.....	1910
I. A. Becker.....	1911
S. K. Sass.....	1912
W. B. Day.....	1913

SECOND VICE-PRESIDENTS

F. W. Meissner.....	1906
O. E. Bruder.....	1907
H. A. Miner.....	1908
E. N. Gathercoal.....	1909
I. A. Becker.....	1910
S. K. Sass.....	1911
Wm. Gray.....	1912-1913

THIRD VICE-PRESIDENT

Amanda W. Stahl.....	1906
Charlotte E. Stimson.....	1907
A. H. Clark.....	1908
Dr. Bernard Fantus.....	1909
Mrs. M. M. Gray.....	1910
Charlotte E. Stimson.....	1911

Mrs. M. M. Gray.....	1912
A. W. Linton.....	1913

SECRETARY-TREASURERS.

W. B. Day.....	1906-1912
E. N. Gathercoal.....	1913

DECEASED MEMBERS.

Jacob Baur, Henry Biroth, Leo Eliel, H. P. Eysenbach, Edwin O. Gale, Carl S. N. Hallberg, A. E. Hiss, Louis Lehman, Oscar Oldberg, Thomas Whitfield.

MEMBERSHIP LIST OF THE CHICAGO BRANCH OF THE A. P. A.

Dr. W. C. Abbott, 1605 N. Hermitage Ave.; Albert G. Ackerman, 1278 Irving Park Boulevard; Gustave H. Adamick, 189 E. Madison St.; Adolph Emil Anderson, 3018 Racine Ave.; Carl G. Anderson, 413 W. Division St.; Charles H. Avery, 5460 Ridgewood Ct.; Edwin J. Backus, 2304 North Ave.; M. L. Barrett, 233 W. Lake St.; James E. Bartlett, 126 N. Franklin St.; N. Gray Bartlett, 1837 Forrestville Ave.; Henry J. Bate, 559 E. 43rd St.; Irwin A. Becker, care Michael Reese Hospital, Twenty-ninth and Groveland Ave.; Emil C. L. Behrens, 2028 S. Halsted St.; Mrs. Marie Blahnik, 634 W. Eighteenth St.; Wm. H. Biermann, 1610 W. Chicago Ave.; John Blocki, 1300 Indiana Ave.; Wilhelm Bode-mann, Fiftieth and Lake Ave.; John J. Boehm, 1901 S. Halsted St.; Otto E. Bruder, 122 S. Michigan Blvd.; Harold N. Bruun, 1201 Grand Ave.; Dr. Alfred S. Burdick, 2118 Giddings Ave.; Merle M. Burdick, 4846 N. Hermitage Ave.

Claude C. Cannon, 4133 Clarendon Ave.; T. F. Cannon, 160 N. Fifth Ave.; Henry C. Christensen, 452 Bowen Ave.; Professor A. H. Clark, 74 E. Twelfth St.; H. W. Colson, 5755 Sangamon St.; Benj. S. Coolban, 459 W. Sixty-third St.; J. P. Crowley, 800 W. Thirty-first St.

Professor W. B. Day, 74 E. Twelfth St.; L. A. Druehl, 2000 N. Park Ave.; Mrs. L. A. Druehl, 623 Alaska St.

Ben L. Eicher, 5903 Magnolia Ave.; Geo. P. Englehard, 536 S. Clark St.; Louis A. Ellisburg, 5035 Washington Blvd.

Dr. Bernard Fantus, 749 S. Ashland Blvd.; Dr. Frederic Fenger, care Armour & Co., Union Stock Yards; John F. Fischnar, 6839 Wentworth Ave.; Charles A. Forbrich, 5023 Marshfield Ave.; I. A. Forster, 3129 Johnston Ave.; Frederick L. Fraenhoff, 136 Hin-

man St., Aurora, Ill.; Herman Fry, 5050 Kenmore Ave.; N. George Fry, 401 W. North Ave.; Oliver F. Fuller, 235 W. Randolph St.

E. N. Gathercoal, 74 E. Twelfth St.; Professor H. M. Gordin, 31 W. Lake St.; Charles W. Grassley, 802 W. Twelfth St.; Mrs. M. M. Gray, 4151 Gladys Ave.; Wm. Gray, 1753 W. Congress St.

L. M. Haesler, 1960 W. Madison St.; Otto J. Hartwig, 1950 Milwaukee Ave.; J. A. Hellmuth, 2148 N. Robey St.; Albert L. Herbster, 229 National St., Elgin, Ill.; Joseph C. Hermanek, 4016 W. Twenty-sixth St.; William Albert Herrick, 901 E. Seventy-fifth St.; W. S. Hilpert, 543 E. Thirty-fourth St.; Bruno A. C. Hoelzer, 2403 W. North Ave.; H. J. Holthoefer, 2300 S. State St.; Harry A. Hood, 1622 West End Ave., Chicago Heights, Ill.; Otto G. Hottinger, 801 Milwaukee Ave.; Frederick Hunsche, 4415 N. Winchester Ave.

E. D. Irvine, 536 S. Clark St.

Thomas N. Jamieson, 4508 Woodlawn Ave.; A. J. Jehlik, 3401 W. Twenty-sixth St.; Professor Gerhard H. Jensen, 6619 Ellis Ave.; R. J. C. Josenhans, 1601 W. North Ave.

Wilhelm Kramer, 4016 Lincoln Ave.

E. H. Ladish, 401 W. North Ave.; L. P. Larsen, 3201 W. Madison St.; J. V. Lee, Main Street and Chicago Ave., Evanston, Ill.; O. W. Lee, 6 Fifth Ave., La Grange, Ill.; A. E. Letzler, 1122 W. Erie St.; Professor Arthur W. Linton, 407 N. College Ave., Valparaiso, Ind.; Wm. Loesch, 3040 Wentworth Ave.; J. S. Lorenz, 1476 Irving Park Blvd.; J. T. Lueder, 6859 S. Halsted St.

J. A. Mahaffy, 652 E. Eighty-ninth Place; Frank M. Mares, 2876 Archer Ave.; Charles E. Matthews, 221 Randolph St.; Charles E. McCauley, 103 Marion St., Oak Park, Ill.; H. McCousland, 1879 E. Ravenswood Pk.; John J. McClugage, 1134 E. Sixty-third St.; Charles H. McConnell, 122 N. State St.; Fred W. Meissner, Jr., 820 Main St., LaPorte, Ind.; Frederick H. Meyer, 3207 N. Ashland Ave.; Albert Miller, 2058 Lincoln Ave.; George P. Mills, 1000 Davis St.,

Evanston, Ill.; Professor Maurice Miner, 31 W. Lake St.; J. W. Morrisson, 310 W. Washington St.; Charles J. Myers, 2840 S. State St.

Professor G. D. Oglesby, 200 E. Thirty-first St.

Professor C. W. Patterson, 31 W. Lake St.; J. H. Patterson, 3640 Cottage Grove Ave.; Thomas H. Potts, 122 S. Michigan Blvd.; Dr. Wm. A. Puckner, 535 Dearborn Ave.

E. H. Ravenscroft, 4757 E. Ravenswood Pk.; Rudolph Rhode, 1301 N. Clarke St.

H. P. Sandkoetter, 52 Harrison St.; Stephen K. Sass, 1725 W. Eighteenth St.; Theodore I. Scheips, 534 Oakdale Ave.; Andrew Scherer, 1201 N. State St.; Chas. H. Schimelfening, 323 E. Garfield Blvd.; Louis A. Schmid, 11324 Michigan Ave.; Miss Rose P. Schmidt, 2133 S. Halsted St.; Fred M. Schmidt, 5 S. Wabash Ave.; C. F. Wm. Schultz, 159 Chicago St., Elgin, Ill.; George L. Secord, 6334 Wayne Ave.; M. A. Sheblessy, 3459 Indiana Ave.; Professor Clyde M. Snow, 74 E. Twelfth St.; Herbert W. Snow, 220 N. Franklin St.; Cloyde W. Snyder, 5301 Indiana Ave.; Wm. E. Snyder, 6140 Michigan Ave.; Harry E. Stadelmann, 7042 Stony Island Ave.; Louis C. Staudt, 15 S. Broadway, Aurora, Ill.; Otto P. Stephan, 132 E. Twenty-second St.; Charles E. Storer, East Ohio and Rush Sts.; John Stuchlik, 3859 W. Twenty-sixth St.; Alexander Caldwell Stuckey, 6352 S. Halsted St.; Franklin P. Summers, 1525 Winnemac Ave.

Professor George D. Timmons, 458 Greenwich St., Valparaiso, Ind.

Adolph Umenhofer, 2405 N. Halsted St.

Cornelius VanSchaack, 118 W. Lake St.; Arcadius Voiss, 1200 Wells St.

Lewis E. Warren, 1108 Garfield Ave.; James H. Wells, 241 S. Fifth Ave.; Max J. Wicarius, 3118 Lowe Ave.; Edward Williams, 4400 W. Harrison St.; S. W. Williams, 35 W. Twenty-fifth St.; Charles Wilson, 200 E. Thirty-first St.; W. W. Winberg, 5100 Lake Ave.; Louis Woltersdorf, 717 Ashland Ave.

Fred H. Young, 1759 Ainslie St.

Otto Zeman, 3002 S. Central Park Ave.

The Bulletin Board

TIME AND PLACE OF 1914 MEETING.

The Committee on Time and Place for the 1914 meeting is ready to receive for consideration suggestions or invitations for that meeting.

LEONARD A. SELTZER, Chairman,
32 Adams Ave. West, Detroit, Mich.



AN APPEAL TO A. PH. A. MEMBERS.

As a member of the Membership Committee of the American Pharmaceutical Association I wish to call the attention of the members of this great Association to the duties they owe to it.

You are a member of it, you know what it is doing and has done to benefit every branch of Pharmacy in this country; you know that its undertakings are of such a broad nature that retail druggists, wholesale druggists, manufacturers, chemists, teachers, editors, clerks and everyone interested in pharmacy can find in it a field in which they can improve their conditions. Someone else knew this before you did and was kind enough to ask you to join it and to recommend you, thus giving you the benefits you are enjoying from it today. Now don't you think it your duty to ask your neighbor druggist to join it also, and you know if he has got one grain of appreciation in him he will always be thankful to you for doing him this favor. You will be helping him, helping the Association and helping yourself. There are about 40,000 drug stores in the U. S., every one of which should be represented in this Association, whereas only about 5 percent of this number are members.

If every member would get busy and use a little honest effort to get in new members for two months there would be such an avalanche of new applications that the Nashville meeting would go down in history as a veri-

table Pharmaceutical Meeting. The future of this Association is certain to have in store for it great things for its members. Its sixty years of usefulness has firmly established it as the center of all that is good in Pharmacy. As the laws have become more stringent, the benefits it offers will be more fully realized.

The South, which has been a little slow to realize what the Association stood for, is waking up to the necessity of joining it and there is an active campaign going on there now for new members in which the wholesalers are earnestly cooperating with the Membership Committee in their efforts, and unless all signs fail the records at the Nashville meeting will show many new names.

WILLIAM R. WHITE, Ph. C.,
Chairman Entertainment Committee.



TO THE MEMBERS OF THE SCIENTIFIC SECTION.

As you know the next meeting of the A. Ph. A. will be held in Nashville, August 18. We wish to make the meeting of the Scientific Section at this time a notable one, and to this end we must secure a creditable number of high class papers. We assure you that contributions from you will be greatly appreciated and request that you send titles of any proposed papers as soon as possible. According to our By-Laws, papers cannot be accepted unless the titles are in the hands of the chairman or secretary in time to be published in the last issue of the JOURNAL appearing before the meeting.

We wish to call your attention to the fact that the old Committee on Scientific Papers has been replaced by a Scientific Section, the membership of which is made up of all members of the A. Ph. A. who express their desire to be enrolled. If, therefore, you are interested in this Section and desire to be kept in touch with its work, please send your name at once to the secretary or chairman, and at the same time, if possible, send titles of the papers you expect to present at our next meeting. Very truly yours,

FRANK R. FIDRED, Chairman,
3325 Kenwood Ave., Indianapolis, Ind.

Communications and Correspondence

All communications must be signed by their
Authors

LIMITATIONS ON POWER OF BOARD OF PHARMACY TO MAKE RULES AND REGULA- TIONS.

EDITOR A. PH. A. JOURNAL:

SIR—I am pleased to inform you that the case of Commonwealth of Pennsylvania vs. B. W. T. Tobin, which was practically vs. Sharp & Dohme, as Mr. Tobin was our Philadelphia Agent, and the Pennsylvania State Pharmaceutical Examining Board, could only proceed against a local person and not against a Maryland or other foreign corporation, has on May 1st been decided in favor of Sharp & Dohme and against the said Pharmaceutical Examining Board. The case has been pending since August, 1910, due mainly to delays of one kind or another on the part of the Board, as we were quite desirous of having the case tested and settled, since it involved the broad and important question of reading regulations, adopted by an executive board into a law passed by a legislative body.

The case was one involving a bottle of Essence of Pepsin 1:2000, manufactured by Sharp & Dohme, which Sharp & Dohme have been supplying for the medical profession to the drug trade since 1888, and always of the same consistence, formula and digestive power. According to the Federal Pure Food and Drugs Act and the Pennsylvania Pure Food and Drugs Act of 1909, this Essence of Pepsin was correctly labelled and could legally be sold in Pennsylvania or any other state, and for the following reasons, to wit:

1. It was an established product for which a fixed demand has existed for twenty-three years and it has always given satisfaction.
2. It was correctly labelled, inasmuch as although it was not of the National Formulary digestive strength of 1:3800, it had plainly stated upon its label its correct and claimed digestive power of 1:2000.
3. It was found by the chemists of the Pharmaceutical Examining Board to be above the digestive strength claimed upon

the label and was, hence, found to be a better product even than it was held out to be by Sharp & Dohme.

The Essence of Pepsin case was brought by the Pennsylvania Board to test said Board's right by law to make regulations arbitrarily established by itself part of the organic law of the state. Therefore this question is one of great importance to the drug trade all over the country, as there exists a growing tendency for Federal and State Boards, whose duty it is merely to execute laws passed by Congress or a State Legislature to formulate regulations and endeavor to enforce them as part of the organic law, respectively, of the country or state. The Sharp & Dohme Essence of Pepsin was made the test case, but it has been difficult to get the Pennsylvania Board to bring the case to trial as the Board evidently felt it had no strong case and that the case was going to be contested by able counsel and competent witnesses. As it involved a broad question of moment to the entire drug trade of the land, Sharp & Dohme had fully intended to take it up to the Court of Appeals, and if possible, to the U. S. Supreme Court, in the event that it had been shown that the case was one of interstate commerce instead of intrastate commerce.

The case came up for trial in the court of Oyer and Terminer before Judge Audenried in Philadelphia on Thursday, May 1, and was argued by Assistant State Attorney Maurer for the Commonwealth of Pennsylvania, representing the Pennsylvania State Pharmacy Examining Board, and by Messrs. Charles Biddle and Henry LaBarre Jayne of the firm of Biddle, Paul & Jayne of Philadelphia for Sharp & Dohme. The witnesses for the Board were Messrs. Rohman of the Philadelphia Drug Exchange, Christopher Koch, Vice President of the Pennsylvania Examining Board, Professor C. H. LaWall of the Philadelphia College of Pharmacy, L. L. Walton Secretary of the Board, and H. H. Blair of Philadelphia. The witnesses for Sharp & Dohme were Dr. A. R. L. Dohme, President of that corporation, and Dr. Herman Engelhardt, their chief chemist.

After the bottle of Essence of Pepsin had been brought into the case and Prof. LaWall had testified as to what was the U. S. P. and the N. F., and that he had found that the Essence of Pepsin had shown on digestion test by the U. S. P. method for testing

pepsin products, that it was not below its claimed and labelled strength of 1:2000, but considerably above it, and was, therefore, correctly labelled and not misbranded, the claim was made by the Assistant District Attorney that it was misbranded, because according to the regulations of the Board no Essence of Pepsin could be sold in Pennsylvania that was labelled Essence of Pepsin unless it was of the N. F. strength of 1:3800, i. e., one part would digest 3800 parts of coagulated egg albumen according to the U. S. P. test. Thereupon Mr. Biddle objected and gave as his reason for so doing that regulations were not laws and at once Judge Audenried interposed and said if your case rests upon the effectiveness of regulations drawn by your Board, then I wish to state most emphatically that the legislature of the Commonwealth of Pennsylvania never intended that such a body of men as constitute this Board or any Board, *should have the power to read regulations framed by them into the organic law of this state.* When Mr. Maurer admitted that that was the crux of the whole case, the judge ordered the jury to bring in a verdict of not guilty and dismissed the case.

This decision, hence, establishes for the drug trade the important fact that regulations drawn by executive boards appointed to execute Pure Food and Drug Laws have not the effect of law, and in so far as they affect or modify the law in any way are null and void. The Sharp & Dohme Essence of Pepsin case, hence, promises to be a crucial and important one for many existing conditions and cases pending based upon the regulations of executive boards held out to have the force of law. Very truly yours,

A. R. L. DOHME.

Sharp & Dohme Laboratories, Baltimore, Md.

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SUNDAY REST AND SHORTER HOURS.

EDITOR A. PH. A. JOURNAL:

SIR—To the real professional pharmacist the "wide-open" Sunday as exhibited by such a vast number of drug stores must ever be as a blot upon the good name of such an honorable calling. The writer is not familiar with the attitude of the A. Ph. A. in regard to the Sunday closing question, but he has become convinced, through long years of experience, that the drug store is kept wide open on Sunday for the single and sole pur-

pose of making money. Pharmacy will never come into its own, nor will she be able to draw into her ranks the most desirable of men and women as long as this condition exists. Genuinely Christian men, who desire to be consistent, cannot keep their stores open on Sunday.

The hours of employment would not be legally tolerated in any other line of work. Any candid man will acknowledge that they are excessive.

Legislative enactment should place a maximum limit to the working hours. It is as important to the state that the health and happiness of the drug clerks be conserved as it is of any other of her citizens.

Proprietors drive the good clerks into business for themselves. It is but natural. The human element enters in. It is an ill-spent life devoted entirely to the pursuit of wealth. A clerk, who is married and has a family, must not only sacrifice his earnings but his Sundays as well. Family and home life are but a vague dream to him. It is a social wrong. It is awful for the wife and children. For one, I register my protest against it and plead for the cooperation of the A. Ph. A. to cure this cancerous growth.

Respectfully,

ELLIOTT D. COOK,

Red Bank, N. J.

P. C. P., 1906.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

<>

NASHVILLE BRANCH.

One of the most enthusiastic and interesting meetings in the history of the Nashville Branch of the American Pharmaceutical Association was held at Forman hall, Van-

derbilt University, Thursday afternoon, May 8, with President J. O. Burge presiding.

A communication was received from Prof. W. B. Day, of Chicago, president of the Association, thanking the Branch for the use of slides giving stereopticon views of Nashville which were shown at their last meeting.

A large number of these slides have also been sent to the New York Branch to be exhibited at their next meeting. In these views are some beautiful productions of the scenery around the city and they are proving a great drawing card at the Branch meetings and will no doubt cause many to attend the meeting of the general association body here in August.

R. W. Vickers, of Murfreesboro, chairman of the publicity committee, reported the following as members of his committee: W. R. White and Ira B. Clark, Nashville; T. A. Robinson, Memphis; W. I. Gates, Whiteville; T. J. Shannon, Sharon; J. J. Ingle, South Pittsburgh; Sterling Miller, Chattanooga; A. C. Albright, Knoxville, and Lindsey Bunting, Bristol.

J. B. Sand, chairman of the hotel committee, made a full report, giving the rates the different hotels had made to the convention and the number of delegates each could accommodate.

Many inquiries are being made to the hotels about accommodations, and several large reservations have already been made, a whole floor being secured by the Boston delegation.

Ira B. Clark, chairman of the membership committee, reported that the secretaries of the boards of pharmacy and of the state associations of the South were showing much enthusiasm in cooperating with the committee in its campaign for new members. W. R. White, of this committee, also reported that the southern wholesale druggists were also rendering valuable assistance in this campaign by helping to distribute the literature.

Two applications for membership were received and approved.

A report was made by W. R. White, chairman of the entertainment committee, on some of the proposed features of the entertainment of the convention, and a general discussion followed in which many valuable suggestions were offered.

The offer of a prominent firm to donate

half a carload of grape juice to the committee was ordered gratefully accepted.

Mrs. W. C. Anderson, chairman of the program committee of the Women's Section of the Association, which was recently organized, asked for space on the program for two sessions, and was referred to the Council.

A get-together meeting of the local druggists and their wives and daughters was decided on, to be held about May 20, W. R. White and J. O. Burge being appointed a committee on arrangements.

Dr. E. A. Ruddiman, who will give an address before the Georgia Pharmaceutical Association, was instructed to invite that body to attend the convention.

The election of officers being postponed, the Branch adjourned to meet again June 10 at the same place.

W. R. WHITE, Secretary.



PITTSBURGH BRANCH.

The large number of members, students and visitors who were present at the meeting of the Pittsburgh Branch of the A. Ph. A. on Friday evening, May 9, were well pleased with the good things in store as revealed by the program when it was read, but all were much more pleased after the promised treat had materialized.

Dr. J. H. Beal's "Illustrated Talk on Yellowstone Park" was the feature of the meeting which was looked forward to with pleasant anticipation which was more than realized. Dr. Beal had with him lantern slide views of many interesting and curious objects to be met with in a trip through the park, and as each one was thrown upon the canvas, the doctor told what there was of interest to be said about it from his viewpoint. Throughout his talk the doctor brought out many incidents connected with his trip attaching to both himself and others of the party, and as all of its members were men and women prominent in pharmaceutical circles, these side references kept many of his auditors on the alert for some reference of a personal character concerning some person with whom they were acquainted. By this means, as the various scenes were thrown upon the screen, it made one feel just as though he or she was enjoying the actual trip while listening to a guide, with the added pleasure of hearing quaint re-

marks and personal allusions to members of the party thrown in.

Dr. Beal used no notes, but simply relied upon his memory and what the picture before him would bring to mind. Occasionally, there would come a view that did not awaken a responsive chord in his mind, and at such times the doctor would honestly admit the fact, and pass on to the next scene. This did not occur often, however, and only served to make his talk more intensely intimate and personal in its character. Dr. Beal explained to his hearers that he had not seen his collection of slides for at least ten years until he opened them up in the lecture hall for this occasion.

To those who have enjoyed the privilege of having heard Dr. Beal's lecture on "The Limestone Caverns of America" and have witnessed the remarkable set of views which accompany it, we would advise that they make use of their persuasive powers on the doctor to favor them with his "Illustrated Talk on the Yellowstone Park."

A very instructive and valuable paper was presented by Mr. C. E. Hoffman, a student of the Pittsburgh College of Pharmacy, in which he treated of Oil of Lemon, from its manner of production on down the line until it reaches the consumer. He dealt with the means and methods of adulteration, manner of assaying the oil for citral and some of the uses made of the latter in commerce. Mr. Hoffman also presented interesting facts concerning the near oils of lemon, such as Citronella, Bergamot, etc. This paper was followed by interesting discussion in which Drs. Koch, Emanuel and Saalbach joined, and many valuable points were brought out concerning Oil of Lemon and its constituent citral in commercial practice.

B. E. PRITCHARD, Secretary.



ST. LOUIS BRANCH.

A regular meeting of the St. Louis Branch of the American Pharmaceutical Association was held in the St. Louis College of Pharmacy on Friday evening, April 18, with President Ihardt presiding. The minutes of the February meeting and the report of the meeting held at the Missouri Botanical Garden (Shaw's garden), on March 17 were read and approved.

The Chair then took up the program and called upon Mr. Julius C. Hoester, who gave

a comprehensive oral talk on Serum Therapy. In his opening remarks Mr. Hoester stated that the term Serum Therapy is a misnomer, for there is a vast difference between Serums, Bacterial Vaccines and Toxins. While he appreciated the fact that considerable confusion appears to exist in the minds of many people, due to the synonymous use of these names by unscientific persons either in their conversation or in their writings, there should not be any misapprehension of these terms by pharmacists, for they are capable of fully understanding their relative significance.

He then explained that Bacterial Vaccines or Bacterins are suspensions of killed pathogenic bacteria in physiologic salt solutions; that a Serum usually implies the clear liquid which separates from the corpuscles and other constituents entering into the formation of the clot during the process of the coagulation of the blood from an animal which has been subjected to immunizing treatment with bacteria or their products; that Toxins are metabolic productions of pathogenic bacteria, which, injected into a suitable animal organism, are capable of inciting the elaboration of specific antibodies.

Continuing, he said that Bacterial Vaccines are prepared from cultures of pathogenic bacteria grown upon suitable culture media under the most favorable conditions. After a careful count of the bacterial suspension is made the organisms are killed and the suspension is diluted with a sterile physiologic salt solution to obtain the desired bacterial content in each cubic centimeter, then 0.2 percent tricresol is added as a preservative.

Serums are made by a process which first requires the preparation of the toxin or killed cultures. With Antidiphtheric Serum and Antitetanic Serum, pure cultures of diphtheria or tetanus bacteria are grown on bouillon. As the germs grow a toxin is produced and after a time the bouillon becomes an aqueous solution of toxin, which is filtered to remove all bacteria. The clear filtrate which contains only the toxin is then injected into a healthy horse, beginning with very small doses. The dosage is gradually increased until the horse is thoroughly immunized and his blood is charged with anti-toxin. The horse's jugular vein is then tapped and a quantity of the blood is collected in sterilized glass tubes, which are

closed with plugs of sterile cotton. These are then set aside until the clot separates. The serum is then decanted, a preservative is added, and after being assayed for its antitoxin value, it is put into glass bulbs or syringe containers, ready for use.

The Antistreptococcic and Antigonococcic Serums are produced by injecting killed cultures of the specific bacteria into horses instead of the toxins, otherwise the process is the same as for the other serums.

The therapeutic action of a serum or vaccine when injected into a human being depends upon its power to counteract the poisons or toxins developed in the body by infectious diseases or to render the person immune for a time to the disease.

As to the proper serum or vaccine to use will depend the correct diagnosis of the disease. If the infections are localized, or semi-localized, Bacterial Vaccines are most useful, but in acute general infections the serums should be used. However, neither are infallible, and should be regarded as an auxiliary means of treating the infectious diseases, and as supplementary to the other sources of modern surgery and medicine.

He then classed the vaccines as Stock Vaccines and Autogenous Vaccines. The Stock Vaccines are those prepared in bacteriologic laboratories, and are produced from strains of virulent bacteria obtained from reliable sources. Autogenous Vaccines are especially prepared for use in a given case from cultures of bacteria obtained from the patient himself, and are administered to the patient from whom the original culture is obtained.

Mr. Hoester then briefly described the process of preparation of the bacterial vaccines which now have a recognized place in modern therapeutics, such as Gonococcus, Staphylococcus (in three varieties, albus, aureus, citreus), Streptococcus, Furunculosis, Typhoid, and Colon Vaccines, etc.; also those which will come into more general use, but have not passed the experimental stage, as Neoformans, Pneumococcus, Micrococcus Catarrhalis.

Mr. Hoester was then asked the question, "What are Phylacogens?" Answering, he said that the term Phylacogen has been coined to identify a number of modified bacterial derivatives prepared by Parke, Davis and Company, according to a method originated by Dr. A. F. Schaefer, of California,

and used in the treatment of infectious diseases.

Phylacogens are neither bacterial vaccines nor sera as is usually understood by the popular mind, but are sterile aqueous solutions of metabolic substances, or derivatives generated by bacteria grown in culture. They are made from a large variety of disease-producing bacteria, and after being killed, are removed by filtration through porcelain. The paper was discussed by Messrs. Leo Suppan, Gustav Kring, J. W. Mackelden, Louis Lieberstein, W. K. Ilhardt, Sidney Willette.

A vote of thanks was extended Mr. Hoester and on motion, the meeting adjourned.

J. W. MACKELDEN, Secretary.



CHICAGO BRANCH.

The regular monthly meeting of the Chicago Branch of the A. Ph. A. was held at the University of Illinois school of pharmacy building, Tuesday evening, May 20.

Upon motion by Mr. Gathercoal, seconded by Dr. Bernard Fantus, and after discussion and careful consideration, the following resolution was adopted:

"*Resolved*, That we endorse the proposition and recommendation of the Committee on Drug Reform of the A. Ph. A., which is embraced in the following statement:

"First. That every one who dispenses medicines, whether pharmacist, dispensing physician or other person, shall be responsible for the quality of such medicines dispensed.

"Second. That all drugs and medicines, by whomsoever dispensed, shall be subject to the same supervision, inspection and examination, as applied to the stocks of dispensing pharmacists and shall be held to the same standard, namely, that established under the Food and Drugs Act.

"Third. That physicians who dispense their medicines, except in emergency, shall be required to write the prescription therefor over his signature, serially numbering, dating and filing the same. Said serial number, date and signature, together with proper directions, shall be placed upon package or container in which said medicine is dispensed. The prescription files of such physicians shall be open to the same inspection and supervision as those of pharmacists."

The principal topic of the evening was

the A. P. h. A. building. The discussion was lead by President Day. He said: "The marked growth of the American Pharmaceutical Association during the last seven years, its increase in influence no less than in membership, and more especially the development of a strong monthly JOURNAL, with the advantages that this implies—all these features serve to emphasize the need of a center around which the activities of the Association may be collected to and from which they may extend through the whole field of pharmacy.

"Looking back over the history of our Association, we may trace the successive steps in its upbuilding. Early in its life, the importance of having a permanent Secretary was discerned, and how well the selections were made is apparent when we consider that two men filled this office for nearly half a century, J. M. Maisch from 1865 to 1893, and Chas. Caspari, Jr., from 1894 to 1911.

"To a limited extent, then, the office of the permanent Secretary became the headquarters of the Association's activity in the interval between the annual meetings. But how meager were the advantages thus afforded for carrying on the work without interruption! A year ago our present Secretary stated that the Association did not possess a complete set of its own proceedings—and naturally the opportunities for accumulating a library such as exchanges for our proceedings would have afforded—were lost beyond recall.

"Not the least advantage of a permanent home—a fireproof building where suitable equipment and facilities could be provided—would be this very feature of developing a library—exchanges with our JOURNAL, books sent for review, and donations of books by members, would in a short time result in a collection of books of considerable proportions and be of great assistance to pharmaceutical research.

"Our historical collection would provide the beginning for a museum which, through the efforts of our Historical Section would in time become an important feature. Many interesting pharmaceutical relics would be presented to such a museum if the donors could be assured that the exhibits would be safely cared for and yet be available to the inspection of those who were interested.

"Of more immediate need to the Association is a suitable laboratory where oppor-

tunity could be given for testing the formulas for the official standards, the Pharmacopoeia and National Formulary, as well as for the proposed Receipt Book. Special research work might also be undertaken here, such as was contemplated when the Centennial Fund was established. Should the Association decide to establish a Council on Proprietary Medicine—as has been recently suggested—a laboratory would be a prime requisite.

"The proposed A. P. h. A. home would constitute a true memorial to our illustrious dead, whose memory could be perpetuated by tablets suitably inscribed and placed in its library. Pharmacists of the type of Procter, Maisch, Prescott, Ebert, Hallberg, Oldberg and others whose names will come to our minds in this connection would be most appropriately honored in this manner.

"The office of the Secretary and the rooms devoted to the publication of the JOURNAL, the National Formulary, Receipt Book and such other publications as the Association may undertake, will, of course, be located in this building, which should be so constructed as to allow for additions as needed.

"The home should be located on a convenient but not costly site, preferably in a large city so as to furnish the publication facilities required, and we believe should be reasonably near to the center of population of our country.

"Two financial considerations present themselves: First, the raising of a fund to purchase a site, and to erect a building and equip it. Second, to provide for the necessary expenses of supporting such a home and of utilizing its possibilities as fully as possible. With the growth of the JOURNAL, the larger income from membership and the available proceeds from our permanent funds, I believe that the expense of supporting such a home may be safely assumed. But the problem of raising the fund amounting to perhaps fifty thousand dollars for the site and building, remains. I believe that a general call upon our members and the entire drug trade of the country, in this worthy cause, would meet with a liberal response. We have seen how quickly the Hallberg fund of nearly five thousand dollars, was raised. I am confident that the response to our appeal for a building would be equally prompt and generous.

"And just a word, in conclusion. I wish we might avoid the use of the title 'A. Ph. A. Home.' It has already caused some confusion regarding the real purpose of our project. 'Homes' of various kinds, for the aged, indigent and infirm are common. So that there be no misunderstanding, why not call it the A. Ph. A. Building?"

The project received hearty endorsement from many of the members present and the following resolution, offered by Mr. F. W. Meissner, was unanimously adopted:

Resolved, The Chicago Branch of the A. Ph. A. heartily endorses the project of an A. Ph. A. Building, concurs in the sentiments regarding same expressed by President Day, and pledges itself to give all possible moral and financial support to the establishment and maintenance of such a building."

E. N. GATHERCOAL, Secretary.



DENVER BRANCH.

The April meeting of the Denver Branch of the A. Ph. A. was held Tuesday evening, April 22, at the Albany Hotel.

The usual business meeting was preceded by a dinner, a custom which has done its share towards making the Denver Branch meetings so enjoyable and successful.

The meeting was called to order by President Hoyer about 8 o'clock and the minutes of the previous meeting were read and approved.

Before the regular program for the evening could be taken up, the question arose as to what had been done by the Council as to the publication of an annual volume by the A. Ph. A. After some discussion it was reported that so far as known the Council had taken no cognizance of our resolution. Whereupon Mr. Clayton moved to adopt the following resolution:

WHEREAS, The Denver Branch of the American Pharmaceutical Association, at its December, 1912, meeting, adopted a resolution voicing a protest against the action of the Council of the A. Ph. A. in discontinuing the publication of the annual volume of proceedings; and

WHEREAS, Said resolution has been printed and favorably commented upon by various pharmaceutical journals, thus evidencing that the protest is not merely a local one; and

WHEREAS, Up to the present time, the Council has taken no action toward a reconsideration of the subject; be it

Resolved, That we again call upon the

Council to give this matter due consideration, to the end that a great majority of the members of the A. Ph. A., who are unable to attend the annual meetings, may not be deprived of the most valuable return for the investment made by them in the payment of annual dues; and be it further

Resolved, That copies of this resolution be sent to the members of the Council, and to the various pharmaceutical journals for publication.

The motion was seconded and the resolution adopted by a unanimous vote.

The program for the evening was now taken up, committee reports being the first in order.

The Membership Committee reported that no new members had been secured during the last month, but hoped to be in position to report an increase in the Association family at the next meeting.

The Legislative Committee reported that no adverse legislation had been passed by the session just ended, but that some good bills had also failed. The Cocaine Law was passed and will take effect July 1.

The Liquor Amendment, relieving druggists in dry territory of the burden of carrying a State Retail Liquor Dealers' license, failed to pass. The State evidently needs the revenue.

The Committee on Qualifications for Registered Pharmacists made the following report:

Your committee appointed at our last meeting to confer with the State Board of Pharmacy regarding the requirements by the Board for full registration and granting proper recognition to the Assistant, beg to submit the following report:

A meeting was arranged for and held at the Brown Palace Hotel March 19, 1913, W. F. Thebus, D. Y. Butcher, S. L. Bresler of the State Board being present and three members of your committee.

We presented our request that they raise their requirements for full registration and encourage the taking of the Assistant Certificate by Applicants failing to pass the requirements for full registration.

We reviewed the discussion had at our last meeting and assured the Board that in our judgment proprietors would recognize the Assistant Certificate if the conditions were fully understood by the pharmacists of the State.

Dr. S. L. Bresler, the Secretary of the Board, stated that for a number of years after the adoption of the pharmacy law the Board had not encouraged the recognition of the Assistant Certificate. This naturally discouraged the proprietors from giving employment to any but full registered clerks.

The continuing of this practice was discussed and the Board unanimously agreed to encourage applicants, especially young men and women, to work for the Assistant Certificate, as this will give them recognition under the law and every privilege granted by the law, except being permitted to conduct or manage a pharmacy on their own account, or assuming the management of such business for others.

The members of the Board assured us they were willing to do everything in their power to raise the standard of pharmacy in this State, and would, immediately after the next examination, issue a letter to all pharmacists, both registered and assistants, in the State of Colorado, informing them of such action, believing that in this manner full publicity will be given to proprietors and employees, and should result in stimulating every aspiring young person to obtain the Assistant Certificate as soon as possible, at the same time protecting the public from incompetent service.

The letter to be sent out under the seal of the State Board submitted to your committee, also to the Denver Pharmaceutical Association at their regular monthly meeting, your committee fully approve. It was also unanimously approved by the Denver Pharmaceutical Association.

We give you the letter as submitted, through the courtesy of Secretary of the Board, and is as follows:

"DEAR SIR—At the last meeting of the Board of Pharmacy, held in Denver, March 28 and 29, a new ruling was adopted to raise the standard of the assistant pharmacists and to grant them better rights than in the past. From now on the Board will recognize the assistant pharmacists in the temporary absence of the registered pharmacists, and every pharmacy, drug store, dispensary, and hospital will have to be at all times in charge of either a registered pharmacist, or in his absence, of an assistant pharmacist.

"Kindly take notice at this time, as the Board will inspect all the stores within a reasonable time, and would prefer to find all the stores conducted within the limits of the law."

In discussing the requirements for full registration and especially regarding the raising of said requirements to the equivalent of a college education, the members of the Board called our attention to the State law and the fact that this is not optional with the Board, but is prescribed by statute.

This may be a good point for the members of our Branch to bear in mind, and should an amendment to our present law be considered at the next session of the Legislature you may desire to have this covered at that time.

The members of the Board were unanimous in their request that your committee urge the members of this Branch to encourage a higher educational and moral

training for the apprentice, assuring us they would do everything in their power to raise the standard of pharmacy in Colorado.

The Board do not at this time believe it advisable to formulate two sets of questions for the applicants for registration, but with their new rule of a higher percentage requirement for the full registration certificate and the recognizing of the Assistant Certificate are of the opinion that many advantages will eventually be obtained for the pharmacists of Colorado.

Before closing our report, we desire to extend to the members of Colorado State Board of Pharmacy our sincere thanks for their courtesy in calling a special meeting to hear your committee, for their cordial reception, for their interest shown in the work being done by the Denver Branch of the A. Ph. A., and for their expressed desire to assist in every legitimate manner possible, in bettering the conditions of pharmacy.

Respectfully submitted,

A. W. CLARK,
F. I. LORD,
EMMETT POWERS,
Committee.

It was moved to adopt the report. The motion was seconded and carried.

President Hoyer suggested that the Rocky Mountain Druggist publish a brief notice every month explaining the new Board of Pharmacy ruling. After a short discussion the committee was requested to see that this ruling received the proper publicity.

It was brought out that the daily papers who published the examination results did not give the names of those who passed for assistant. Mr. McKenzie suggested that the names of both classes be published without discrimination as "having successfully passed the examination."

The committee was requested to take this matter up with the State Board.

The Library Committee made the following report:

The Library Committee begs to make the following report of the progress of its work since your appointment of this committee, February 18, 1913:

The first meeting of this committee was held March 4th at Mr. Alkire's store, all members of the committee being present. At this meeting the committee decided to send the following letter to all druggists in Denver and vicinity:

DENVER, COLO., March 6, 1913.
Brother Druggists:

Pharmacy of Colorado and Denver in special received a decided boost and a high and praiseworthy fraternal spirit was evident at the February meeting of the Denver Branch of the A. Ph. A. when this body went on

record in favor of establishing a pharmaceutical library in Denver. It may be easy to cast your vote in favor of a proposition of this nature, but more than this was done. Listen! Nine of the members present voluntarily subscribed a total of \$160 in subscriptions ranging from \$5 to \$100 in less time than it takes to tell you about it. A snug number of pharmaceutical books were offered, including a copy of the U. S. P. of 1820; bound volumes of pharmaceutical journals; text books, etc., as well as the free use of a desk, shelf room and suitable quarters for housing the library at present. All in all, a fine start has been made and a committee appointed to carry out the work outlined.

To carry out the plan successfully this committee needs your support and aid, and this letter is a plea for same. We know it would be idle to elucidate the benefits to be derived from this library and we also feel sure that no comment on this point is necessary. But we do most earnestly solicit your support, whether financial, in form of books, or moral.

We shall appreciate a few dollars or less if you can afford it; we shall appreciate any book or literature along pharmaceutical lines or related sciences in English or foreign languages, new or old, that you may care to give; and, last but not least, we shall greatly appreciate your moral support;—that is, boosting the work, availing yourself of the benefits of this library and encouraging others, your clerks and apprentices in special (let them read this letter), to make use of it. For the greatest value of any library lies in the knowledge it disseminates.

Will you indicate on the enclosed card what support you can give us? Please sign it and mail to us now before the matter slips your mind. Thanking you, we remain,
Yours fraternally.

On March 7th, 184 of these letters were sent out, and a postal addressed to the Chairman enclosed with each.

A letter was also sent to President Fine of the State Association, asking for the transfer of the so-called "Library Fund" in the State Association Treasury to this committee. The following reply was received:

Boulder, Colo., March 12, 1913.

Mr. F. W. Nitardy:

My Dear Nitardy—Replying to your letter regarding the \$100 appropriation for the benefit of the Pharmaceutical Library, will say my memory was a little hazy on this point and before replying I wrote our Secretary for information as to status of this fund and now have his minutes before me.

From these it appears that this fund was to provide a permanent meeting place for the Board of Pharmacy and to provide equipment for same, all of which was to remain the property of the Colorado Pharmaceutical Association.

From this, the only record of our action taken at Manitou, our right to turn this

fund over to the Denver Branch of the A. Ph. A. for a library seems a little doubtful, and though I should personally be very glad if we can do it, it seems to me it ought to come before the whole Executive Committee, and if in their judgment we have the right to so dispose of the fund, I would favor such action at our Glenwood meeting as would enable us to do so.

I am writing Mr. Clayton to this effect and will ask him to lay the matter before each member of the Executive Committee, and assure you it is my desire to see the fund turned over at the earliest moment consistent with our rights in the matter.

Yours truly, E. G. FINE.

This reply revealed that several of our members as well as your Chairman of this committee were in error about the conditions under which this fund had been placed in the hands of the State Association by the State Board of Pharmacy.

A letter was also sent to the Secretary of the Denver Pharmacy Association asking support for the library from this organization, with the result that this body voted \$50 to our fund at its next meeting.

On April 8th the committee held its second meeting at Prof. Seymour's School of Pharmacy, all members being present, and outlined plans for further work. At this meeting a second letter to Denver druggists who had not responded to the first letter was decided on, and these were sent out soon after this meeting. This letter reads as follows:

DENVER, COLO., April 10, 1913.

Brother Druggists:

On the 6th inst. we wrote you in regard to the work of the Denver Branch of the A. Ph. A. towards the establishment of a Pharmaceutical Library. Nothing having been heard from you, we are taking the liberty to address you again on this subject in the hope that we may be favored with an expression from you.

It is the committee's aim to establish a library that will meet as nearly as possible the wishes and desires of every druggist in Denver, and to accomplish this we should greatly appreciate it if you will send us a list of such books as you would like to see placed in the library. You will greatly facilitate our work if you will do this now. It can readily be seen that without such an expression from you and other druggists the committee will be more or less at sea when it comes to purchasing books.

Hoping that you will favor us with your valuable suggestions at your earliest convenience, we remain, Yours fraternally.

Letters were also sent to a list of Pharmaceutical journals, asking them to put our library on their mailing list.

A letter to pharmaceutical authors was also written to be sent out as fast as the proper list can be collected.

In the meantime the Library Committee

received the following subscriptions towards the Library Fund:

W. A. Hoyer.....	\$100 00
A. W. Clark.....	5 00
W. O. Scholtz.....	25 00
R. H. McKenzie.....	5 00
F. J. Lord.....	5 00
S. L. Bresler.....	5 00
John Best.....	5 00
S. T. Hensel.....	5 00
L. L. Alkire.....	5 00
H. Cordes.....	5 00
A. Swoboda.....	10 00
L. Wilson.....	5 00
F. W. Nitardy.....	5 00
Denver Pharmaceutical Association..	50 00
J. A. Martin.....	5 00
A. S. Ryan.....	5 00
C. L. Bieser.....	5 00
H. M. Snider.....	5 00

Total\$260 00

Of this, \$80 has been received by the Chairman.

The following books have also been offered to the Library:

U. S. P. of 1820 and U. S. Dispensary of 1833, by C. M. Ford.

Gray's Lessons in Botany, 1879; Wood's Library of Standard Medical Authors, 1879, by H. Cordes.

Mercks' Index, 1896; Digest of Comments on U. S. P., by Mrs. Kern.

Green's Chemistry, 1829; Bottger's Qualitative Analysis, 1906, by Emmett Powers.

Manual of Therapeutics, P. D. & Co., by W. O. Scholtz.

The Modern Pharmacist—N. A. R. D.; Proceedings of the N. W. D. A. for 1906-7-8-10 and 11; Mercks' 1907 Index; Digest on Comments on the U. S. P., 1906 and 1908; State Pure Food and Drug Law, 1911; Proceedings of the New Jersey Ph. A. of 1907 and 1909; by the Rocky Mountain Druggist.

A set of Schimmel's Semi-Annual Reports from 1909 to date, by Mr. Barada of Kansas City.

Dr. Oldberg's "Pharmacy"—a very valuable text book on practical and theoretical pharmacy finished by Dr. Oldberg just before his death. Published and presented to us by Prof. George D. Oglesby of Northwestern University, Chicago.

"Medicinal Plants"—Millsbaugh—two volumes containing 180 large color plates of medicinal plants, embodying over 1,000 drawings and describing medicinal plants indigenous to and naturalized in the U. S. These two most valuable volumes were presented to the library by Mr. E. L. Scholtz.

Bound volumes of the Druggists' Circular, about 20 years, by W. A. Hoyer.

Set of proceedings of the A. Ph. A., about 35 years, by John Best.

American Illustrated Medical Dictionary, by R. N. McKenzie.

King's American Dispensatory (2 volumes); American Homeopathic Dispensatory; United States Dispensatory, 1868;

Urological Dictionary, King, National Dispensatory, second edition; Attfield's Chemistry; Bound volumes of the Druggists' Circular, 1881 to 1887, inclusive; Pharmaceutische Chemie, Fluckiger, 1879; United States Pharmacopoeia, 1880; Essentials of Materia Medica, Garrod, 1865, by John A. Martin.

A portion of these books are in the hands of the committee now.

Respectfully submitted,

F. W. NITARDY,

JAMES SEYMOUR,

L. L. ALKIRE,

Library Committee

It was moved the report be adopted and the motion was carried.

The ownership and name of the library were discussed. President Hoyer suggested that the Denver Branch continue in the ownership of the library for the present, and Mr. Lord suggested the library be known as "The Colorado Pharmaceutical Library." Both suggestions were adopted by motion.

The Special Committee appointed for the purpose presented the following resolution for adoption:

It is with the sincerest sorrow that the Denver Branch of the American Pharmaceutical Association announces the loss of one of its most valued members on October 18, 1912, when Lester B. Bridaham was suddenly called from his labors to that eternal rest which awaits the weary and toiling pharmacist.

The craft in Colorado has parted with one who had always held a warm place in the affection and esteem of his colleagues.

Mr. Bridaham's experience in pharmacy extended from the rudiments of bottle-washing through the career of dispenser and traveling salesman to the position he occupied at the time of death as manager and director of one of the largest establishments of its kind in the West. Varied experiences of our friend were such as to enable him to sympathize with and understand his fellow pharmacist in all his undertakings, and none were more ready than he to respond when occasion required, to render any assistance in his power. He was at all times a liberal giver and willing worker in all that made for the advancement of pharmacy and the betterment of those engaged in it.

In testifying feebly as we now do to the high character and services of our beloved associate, we extend to the bereaved family our deepest sympathy in their irreparable loss and commend them to the tender mercies of Him whose ways, though inscrutable, are most wise and just, and Who doeth all things well.

R. H. MCKENZIE,

CHAS. M. FORD,

Committee.

The report was adopted.

The Secretary reported that he had communicated with Prof. Ramaley on the subject of botanical excursions and received the following reply:

BOULDER, COLO., April 7, 1913.
Mr. F. W. Nitardy, Denver, Colo.:

DEAR SIR—Replying to your communication of recent date I regret to say that it will be impossible for me to serve as conductor for your excursions this summer. I shall be away from town most of the time, at least on Sundays, as I have already arranged to carry out some botanical studies that will take all of my spare time.

It occurs to me that you might be able to secure Professor Ellsworth Bethel, of the East Side High School, Denver. Mr. Bethel is a botanist of ability and knows really more about the local flora than any man living in the State.

Regretting that I cannot be of service to you, I am,
Yours very truly,
FRANCIS RAMALEY.

The Secretary then wrote to Prof. Bethel and received the following reply:

EAST SIDE HIGH SCHOOL, April 20, 1913.
Mr. F. W. Nitardy, City:

DEAR SIR—I have your favor of the 17th inst. and in reply thereto will say that I do not know that I shall be able to join you in your excursions. I should be very glad to assist you in any way possible and should be pleased to determine any specimens which you may collect and where possible will go out with your party for a few hours, at least, if you will let me know when you are going. I suppose that most of you are familiar with the more common medicinal plants, such as the various sages, "Osha," Oregon grape, ergot (a fungus parasite of our grasses), aconite, etc. However, there are many plants which should be investigated. I believe that no work has been done along the line of research since the demise of my good friend, and co-laborer, John Kochan.

I usually have a Sunday engagement with the Colorado Mountain Club as naturalist and I believe that your members would get more from a membership in this club than from any other source, as their special interest lies in studying the local natural history. This organization has a number of members familiar with the more common plants, though I believe that no one is working on the technical phase but myself.

Let me know when you have your walks, and if possible I shall gladly give my assistance gratis where there is not too much time involved.

I have a good collection of plants poisonous to stock at the State House and propose arranging a set of all medicinal plants also, and should appreciate your cooperation in making it as complete as possible. I should be pleased to have you call at High School

any day after 12:30 and talk the matter over with me. Yours very truly,

ELLSWORTH BETHEL.

The Secretary stated that Mr. Ford would report on the subject of transportation in connection with the excursions. Mr. Ford stated that he believed the street car would be the best means, as all other means would make the excursions an expensive proposition.

After some discussion it was decided to invite Prof. Bethel to the next meeting and have the discussion continued then.

The subject of a permanent home for the A. Ph. A., on the program for discussion, was also deferred to the next meeting.

The subject of a permanent home for the State Board of Pharmacy and the State and City Pharmaceutical organizations was next discussed. It was suggested that the State University in establishing its third-year course in Denver this fall may be induced to combine with us in this movement. As no definite information as to the plans of the various bodies interested was available, nor the amount of money available for this purpose from the various sources known, Mr. Nitardy moved that a committee of five, including the President of the Colorado Pharmaceutical Association, the President of the Denver Pharmaceutical Association, the Secretary of the Board of Pharmacy, the Dean of the Department of Pharmacy of the U. of C. be appointed by the President to investigate the feasibility of joint and permanent quarters and report at the next meeting. The motion carried and President Hover appointed the following committee:

Charles W. Ford, Chairman.

E. F. Fine.

L. L. Alkire.

S. L. Bresler.

Prof. H. C. Washburn.

The discussion of the subject was continued to the next meeting.

The subject of weekly druggists' lunches was then taken up and discussed. No definite action, however, was taken on the matter as it was thought best to have the city Association take the subject up also.

Compound Syrup of Hypophosphites was then taken up. The question arose as to what means would best prevent the growth of mould and fermentation. It was brought out in the discussion that the syrup formed a very suitable media for the growth of

yeast and fungi and that proper protection against contamination of spores, etc., would eliminate the trouble. To this end it was suggested to keep the syrup in bottles not larger than one pint and sterilize same or rinse them with sulphuric acid and distilled water before using.

Compound Syrup of Phosphates and Decolorized Tincture of Iodine were also discussed. It was stated that experience had proven that the crystallization of Ca. Salts as well as discoloration through caramelization of the sugar in this preparation could be overcome by keeping the product in a refrigerator. Mr. Clayton suggested that a solution of Iodides might form a more agreeable and just as effective preparation as our present Decolorized Tincture.

The hour being very late, it was moved to adjourn.

F. W. NITARDY, Secretary.



CINCINNATI BRANCH.

The deferred meeting (postponed on account of street car strike) of the Cincinnati Branch, A. Ph. A., was held May 27, 1913. President J. U. Lloyd presiding.

The minutes of the previous meeting having been approved, the Secretary read a communication from Prof. J. H. Beal, advising the election of a representative of the Cincinnati Branch on the Council, which being done, resulted in the selection of Prof. C. T. P. Fennel, the term being for three years.

Mr. Charles G. Merrell accepted the position on Committee on Transportation to the Nashville meeting, as well as to act as Chairman of a local committee to be selected by him, their duties being to devise ways and means for the entertaining of visiting members en route to the meeting.

Mr. Frank Freericks gave assurance of practical support in this direction on behalf of the American Druggists Fire Insurance Co.

Mr. Freericks spoke regarding the proposed Home and Laboratory of the A. Ph. A., urging Cincinnati as the best and most central location; and it was decided to have the President appoint a committee of three, the President being a fourth member ex-officio, with instructions to take active and energetic steps with the above object in view.

The business meeting being ended, the

President introduced to the expectant audience the speaker of the evening, Dr. Otto Juettner, who in a delightfully entertaining manner presented his lecture, "Pioneers of Medicine in Cincinnati."

This lecture is highly instructive and the stereopticon views presented with it vie with the eloquence of the words of the speaker.

The lecture takes us back to the time of Benjamin Rush, one of the signers of the Declaration of Independence, a leader of men and one of the greatest teachers of medicine the world has ever seen; Elijah H. Smith, a medical philosopher and humanitarian of rare attainments; David Hosack, a surgical genius; Jacob Bigelow; Nathan Smith, whom S. D. Gross calls the best all-around American physician of his time, and many other men of similar caliber, who were blazing the path of progress on behalf of medical science in New England and throughout the eastern parts of our country. Thus he shows you that the early eastern physicians, at least those who took a leading part in the development of American Medicine, were educated men and not pioneers or self-made men in that sense of the term.

In the West, however, where every foot of ground had to be wrested from the embrace of primitive nature, the real pioneers in every line of human activity were produced. In the medical history of the West, he points out our great figure, whom he describes as the Father of Western Medicine, one of the greatest physicians America has produced, a nobleman by nature, the peer of any of the eastern pioneers in medicine, Daniel Drake, who died in 1852, who was one of the early settlers of Kentucky, and in 1840 was teaching at the Louisville Medical Institute.

Dr. Goforth, who came to Kentucky in 1788, but in 1800 moved to Cincinnati, then called Losantiville. He is credited with being the first physician in the West who practiced vaccination.

He calls Dr. John Hoke the father of the local profession. He was among the first settlers in 1789. Among others he mentions John Filson, a physician who coined the name "Losantiville."

Israel Ludlow, who landed at Yeatman's Cove in 1788; Gen. Arthur St. Clair, who arrived at Ft. Washington, 1790, a graduate of the University of Edinburgh, and being an

enthusiastic member of the military "order of the Cincinnati," changed the name of the village, Losantiville, to Cincinnati.

The first obstetric event in the young village, the birth of David Cummins, after whom Cumminsville was named, suggests the name of the first midwife, Mrs. M. McKnight, of whom Dr. Daniel Drake speaks with much respect.

And so on the lecturer takes you through the years of Cincinnati, showing the growth and development of medical progress up to the present time.

The pictures and the manner of delivery are fascinating and the auditor reaches the end long before he is ready for it. At the conclusion of the lecture, Dr. Juettner was heartily thanked by the society, the auditors declaring themselves to have spent an entertaining and instructive evening.

Adjournment.

CHAS. A. APMEYER, Secretary.

Council Business

COUNCIL LETTER No. 13.

Philadelphia, May 5, 1913.

To the Members of the Council:

Motions No. 22 (Appropriation of \$25 for National Drug Trade Conference), and No. 23 (Election of Members; Applications Nos. 118 to 154, inclusive), have each received a majority of affirmative votes.

The New York Branch submits the following communication:

"The members of the New York Branch of the American Pharmaceutical Association hear with much regret that the Council of the American Pharmaceutical Association has rescinded the motion passed at the Richmond meeting of 1910 directing the publication of the Report on the Progress of Pharmacy as a separate bound volume, and that the plan now proposed is to publish the Report piecemeal in the issues of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The members of the New York Branch consider such treatment of the Report as a serious error and have therefore passed the following resolution, which it submits to the Council through the General Secretary:

Resolved, That the New York Branch of the American Pharmaceutical Association requests the Council of the American Pharmaceutical Association to reconsider its vote,

directing the publication of the Report on the Progress of Pharmacy in monthly installments in the JOURNAL, and that the Council be further requested to publish the Report in a separate bound volume, as agreed upon at the Richmond meeting."

In connection with this subject, it is in order to state that at the Denver (1912) meeting of the Association, the action of the Richmond (1910) meeting was reconsidered, and it was decided to publish the Report on the Progress of Pharmacy covering the period from June 30, 1910, to December 31, 1911, with the official data, etc., as a separate volume or Proceedings (Volume 59, 1911), and also, that future Reports on the Progress of Pharmacy be published monthly in the JOURNAL, beginning January, 1913, (Journ. A. Ph. A., 1912, 1103).

In view of the importance of this question—if it is to be reopened—and the fact that it cannot properly be disposed of by mail-vote, and that, no matter which way the vote goes, the subject will be brought up again at the Nashville meeting, it is suggested that the consideration of the subject be postponed until that date.

Furthermore, the Committee on Publication is considering the question and will report upon it at the Nashville meeting.

The subject has been discussed in Council Letters No. 3 (November 19, 1912), by C. Lewis Diehl; No. 4 (December 2, 1912), by H. H. Rusby; A. H. Clark and W. B. Day; No. 6 (December 13, 1912), by James O. Burge, J. M. Good and Thomas F. Main, and No. 7 (December 26, 1912), by A. H. Clark.

Motion No. 24 (Appropriation of \$100 to National Drug Trade Conference, Second Meeting). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$100, or so much thereof as is necessary, be appropriated for the payment of the expenses of the delegates to the second meeting of the National Drug Trade Conference. The above appropriation is approved by the Committee on Finance.

Motion No. 25 (Election of Members). You are requested to vote on the following applications for membership:

No. 155. Sister Mary Bernard Welch, Hotel Dieu, 4004 Tulane Ave., New Orleans, La., rec. by Philip Asher and H. M. Whelpley.

No. 156. Philip Reiser, 562 Auburn St., Camden, N. J., rec. by George M. Beringer and J. W. England.

No. 157. Robert V. Johnson, Sgt. 1st Class, Hosp. Corps, U. S. A., Hospital Columbus Barracks, Columbus, Ohio, rec. by John Baigent and Lewis D. Harp.

No. 158. W. A. Talbott, Warren, Pa., rec. by J. H. Beal and J. W. England.

No. 159. Carl Paul Schlicke, 440 Washington St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 160. Jacob Weil, 225 Canal St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 161. Paul H. Brickelmaier, 220 Greenwich St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 162. R. Wilfred Balcom, Custom House, Nashville, Tenn., rec. by E. A. Rudiman and William R. White.

No. 163. Harry E. Stewart, 15-17-19 East Adams St., Jacksonville, Fla., rec. by J. H. Beal and J. W. England.

No. 164. Max Mackler, 387 S. Water St., New Bedford, Mass., rec. by Leon A. Thompson and Elie H. LaPierre.

No. 165. Clarence Earle Armstrong, Flat River, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 166. William James Warner, Tillamook, Oregon, rec. by John M. A. Laue and Ralph Crysler.

No. 167. Otto Stanley Marckworth, 426 Chamber of Commerce, Columbus, Ohio, rec. by J. H. Beal and J. W. England.

No. 168. Robert Monroe Walker, 1408½ East 43d St., Seattle, Wash., rec. by Charles W. Johnson and Harry J. Siegel.

No. 169. Harry L. Harris, 100 William St., New York, N. Y., rec. by J. H. Beal and J. W. England.

No. 170. Edgar Philip Heidebreder, 1707 Broadway, Quincy, Ill., rec. by A. H. Clark and W. B. Day.

No. 171. Earl William Rahn, 2308 E. 103d St., Cleveland, Ohio, rec. by T. Bernard Tanner and Lewis C. Hopp.

No. 172. Otto Klingmann, 2634 8th Ave., New York, N. Y., rec. by Louis Berger and Hugh Craig.

No. 173. Hugo Hermann Schaefer, 804 A Willoughby Ave., Brooklyn, N. Y., rec. by George C. Dickman and C. O. Bigelow.

No. 174. Leo Stein, 410 West 13th St.,

New York, N. Y., rec. by George C. Dickman and C. O. Bigelow.

No. 175. Leo Koon, 15 Main St., Port Washington, N. Y., rec. by George C. Dickman and Carl P. Wimmer.

Very truly yours,

J. W. ENGLAND, Secretary

415 N. 33d St., Philadelphia, Pa

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COUNCIL LETTER No. 14.

PHILADELPHIA, May 29, 1913

To the Members of the Council:

The following tentative program for the sixty-first annual meeting of the Association to be held at Nashville, August 18-23, 1913, is submitted by the General Secretary, Secretary of the Council and Local Secretary:

Monday, August 18.

- 9:00 a. m. Meeting of the Council.
 - 10:30 a. m. National Association of Boards of Pharmacy.
 - 3:00 p. m. First General Session of the Association.
 - 7:30 p. m. First Session of the House of Delegates.
 - 9:30 p. m. President's Reception.
- Tuesday, August 19.*
- 9:00 a. m. Meeting of the Council
 - 10:30 a. m. Second General Session of the Association.
 - 2:30 p. m. Women's Section.
 - Section on Scientific Papers.
 - Section on Commercial Interests—National Association Boards of Pharmacy (second session).
 - 7:30 p. m. Second Session of the House of Delegates.
 - Section on Pharmacopœias and Formularies.

Wednesday, August 20.

- 9:00 a. m. Meeting of the Council.
- 10:30 a. m. Section on Education and Legislation.
- 12:00 p. m. Reunions of College Alumni.
- 2:30 p. m. Section on Practical Pharmacy and Dispensing.
- Conference of Pharmaceutical Faculties.
- 6:30 p. m. Reunions of College Alumni.
- 8:00 p. m. Section on Education and Legislation (second session).
- Section on Commercial Interests (second session).
- Women's Section (second session)

Thursday, August 21.

- 9:00 a. m. Meeting of the Council.
 10:30 a. m. Joint Session of the Section on Education and Legislation, Conference of Pharmaceutical Faculties, and National Association of Boards of Pharmacy.
 2:30 p. m. Women's Section (third session).
 Section on Scientific Papers (second session).
 Section on Practical Pharmacy and Dispensing (second session).
 4:30 p. m. Trolley Ride over the City of Nashville.
 8:00 p. m. Garden Party and Park Concert.

Friday, August 22.

- 9:00 a. m. Meeting of the Council. (Organization meeting.)
 10:30 a. m. Section on Historical Pharmacy.
 Conference of Pharmaceutical Faculties.
 2:30 p. m. Excursion to the Hermitage.
 8:00 p. m. Section on Historical Pharmacy (second session).
 Third Session of the House of Delegates.
 Section on Pharmacopœias and Formularies.

Saturday, August 23.

- 9:00 a. m. Meeting of the Council.
 10:30 a. m. Final General Session of the Association.

In preparing the above program the aim has been to give two or more sessions to each Section. If the time allotted is not sufficient for the completion of the work, it is presumed that the Section or Society will arrange for adjourned meetings at such times as will not interfere with other portions of the general program.

Comments on the above program and motions for amendments should be sent to the Secretary of the Council, J. W. England, 415 N. 33d St., Philadelphia, Pa., in time for the next issue of the JOURNAL.

Do you approve above Program? This will be regarded as *Motion No. 26 (Approval of Suggested Program for 1913 Annual Meeting)*.

Motion No. 27 (Election of Members).

You are requested to vote on the following applications for membership:

No. 176. Albert Cook, 1805 N. 10th St., Terre Haute, Ind., rec. by Clyde M. Snow and W. B. Day.

No. 177. William Michael Knapp, Roanoke, Ill., rec. by A. H. Dewey and C. B. Jordan.

No. 178. George Charles Kraemer, 5969 South Boulevard, Chicago, Ill., rec. by E. N. Gathercoal and W. B. Day.

No. 179. Edward Luckiesh, 205 S. Summit St., Maquoketa, Iowa, rec. by W. B. Day and E. N. Gathercoal.

No. 180. Marvey Harrison, 200 East Main St., Dothan, Ala., rec. by Max Morris and J. H. Beal.

No. 181. Edward W. Harrington, 203 W. 6th Ave., Columbus, Ohio, rec. by Anna G. Bagley and J. H. Beal.

No. 182. Clifford C. Glover, 520 Hill St., Ann Arbor, Mich., rec. by W. S. Hubbard and A. B. Stevens.

No. 183. George J. Shull, Sergeant 1st Class, Hospital Corps, U. S. A., Fort Thomas, Kentucky, rec. by W. B. Day and A. H. Clark.

No. 184. Ferdinand C. Schapper, 192 N. Clark St., R. 401-406, Chicago, Ill., rec. by W. B. Day and A. H. Clark.

No. 185. Douglas McGill Penick, 918 Commerce St., Lynchburg, Va., rec. by William R. White and J. O. Burge.

No. 186. William L. Hardigg, Evansville, Ind., rec. by H. M. Whelpley and Theo. F. Meyer.

No. 187. Isaac Clifton Smith, Ocilla, Ga., rec. by Max Morris and W. S. Elkins, Jr.

No. 188. Charles A. Gilbert, 159 Broadway, Providence, R. I., rec. by James O'Hare and William O. Blanding.

No. 189. Forest E. White, Sgt. 1st Class, Hospital Corps, Fort Porter, Buffalo, N. Y., rec. by W. B. Day and A. H. Clark.

No. 190. John Douglas Glancy, Main St., West Upton, Mass., rec. by Elie H. LaPierre and Theodore J. Bradley.

No. 191. Nicholas Ernest Boyajian, 332 Tremont St., Boston, Mass., rec. by Theodore J. Bradley and Elie H. LaPierre.

No. 192. Edgar O. Greeno, Port Casey, Wash., rec. by W. B. Day and A. H. Clark.

No. 193. Samuel Charles Davis, 3201 West End Ave., Nashville, Tenn., rec. by J. F. McGill and E. A. Ruddiman.

No. 191. J. Hungerford Smith, 410 N. Goodman St., Rochester, N. Y., rec. by J. H. Beal and J. W. England.

No. 195. Elsa Grace Tickhardt, 1042 Madison Ave., New York, N. Y., rec. by James T. Hostman and Louis Berger.

No. 196. Jacob H. Rehfuess, 252 Sumner Ave., Brooklyn, N. Y., rec. by Hugh Craig and Louis Berger.

No. 197. Thomas F. Raymow, 559 Coney Island Ave., Brooklyn, N. Y., rec. by William C. Anderson and Louis Berger.

No. 198. Isiah Solomons, Jr., care Solomons Co., Savannah, Ga., rec. by Louis Berger and H. V. Army.

No. 199. Archie Percival Lohness, 565 Quincy St., Brooklyn, N. Y., rec. by Wm. C. Anderson and Joseph S. Moyer.

No. 200. Cyrus Thurston Gilbert, 27 Stevens St., Danbury, Conn., rec. by Charles H. LaWall and M. R. LaWall.

No. 201. Hugo Winkler, Sergeant 1st Class, Hospital Corps, Post Hospital, Fort Slocum, N. Y., rec. by Alex Berkowitz and Harvey A. Allen. Very truly yours,

J. W. ENGLAND,

Secretary of the Council.

415 N. 33d St., Philadelphia, Pa.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



HENRY M. PETTIT.

Dr. Henry McEwen Pettit, of Carrollton, Mo., died suddenly on April 10, 1913, at the home of his sister in Frederick, Md.

Dr. Pettit was born in Cumberland, Md., April 3, 1836. He lived there until a lad of eleven years when, the father having died, the family moved to Frederick, Md., where he received his early education. At the age of seventeen, he went to Philadelphia, entering one of the largest stores of that city. Two years later he secured a position with a drug firm in Pittsburgh.

When he attained his majority he came West and spent two years in Missouri, Kansas and Nebraska, a part of which time he was in business with Barker & Co. Later he was with a drug firm in Leavenworth, Kansas.

In the fall of 1859 he returned to his old home, continuing in business there until the outbreak of the Civil War. He left Pittsburgh the day Fort Sumpter was bombarded, took the first opportunity to go South, and during the war was in the Medical Department of the Southern Army as Hospital Steward on the staff of Dr. Cullem, Medical Director of Longstreet's corps, and on post duty in a hospital in Virginia. He was also Acting Assistant Surgeon and Executive Officer in the hospital at Raleigh, N. C.

At the close of the war, having been a prisoner for several weeks, he was surrendered at Raleigh, and remained in charge of the hospital until as long as a wounded Confederate soldier remained there.

In 1868 he came West and remained in Rock Island, Ill., for a few months, and then came to Carroll county, Missouri, where he and his brother bought a farm. Later, he rented this, and went to Leavenworth, Kansas.

In 1877 he entered the employ of George W. Smith, of Carrollton, and since then he has been a resident of Carrollton. He continued as manager of the drug store of Mr. Smith until 1888, when upon the death of Mr. Smith, he associated himself with O. T. Welch and they purchased the business, since which time the firm has been known as Pettit & Welch. He became a member of the American Pharmaceutical Association in 1860, and has frequently attended its annual meetings.

Dr. Pettit was made a Mason in Petersburg, Va., in May, 1863. He was a charter member of Covenant Lodge, a Past Master of Carrollton Lodge, F. and A. M. He was exalted as Royal Arch Mason in George Washington Chapter, of which he is a Past High Priest. He assisted in the organization of Navarre Commandery, Knights Templar, and has since been its Eminent Commander. For two years he was secretary of all of the Masonic bodies of the city. Being much interested in the Eastern Star, he was for many years Worthy Patron of that order, and also its Grand Patron.

Dr. Pettit affiliated with the Episcopal

Church of Carrollton, was one of the founders of the church and was most active in its behalf.

As a citizen Dr. Pettit was one of the cleanest and the best. His stand was always with what he recognized as right, and on all public questions he was on the moral side.

Dr. Pettit was never married, yet he gave much of his time to society. He loved young folks, and he never lost an opportunity to entertain them.

For several years, Dr. Pettit had been in failing health. He left Carrollton on February 28 to go to the home of his sister in Frederick, Md., for an extended visit.

This is a brief sketch, as a local paper states, "of one who was known to all our people: who lived in our midst nearly forty years, one whose life was above reproach; one who lived to make others happy, and now he has gone to his reward and his friends here sincerely mourn his departure."

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THOMAS B. NICHOLS.

Thomas Boyden Nichols, for many years a pharmacist in Salem, Mass., died on Sunday, May 4, 1913. Mr. Nichols has been a member of the American Pharmaceutical Association from 1887 to the present time; member of the Massachusetts College of Pharmacy, and has served as a Trustee and Auditor; he was a Mason and Treasurer of his Lodge. Mr. Nichols was a bachelor, quiet and unassuming, of sterling character. His presence will be missed by the pharmacists of Massachusetts whom he numbered as friends.

J. W. E.

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HENRY A. BORELL.

Henry Augustus Borell was born in Reading, Pennsylvania, February 19, 1846. He was the son of the late John and Christina (nee Lauer) Borell. He died April 13, 1913.

Mr. Borell received his early education in the public schools and at the Lititz Academy, Lititz, Pennsylvania. After he left school he went into the brewing business in Schuylkill County, and continued in business as a brewer until the Civil War in 1861, when he enlisted in the Union Army.

After three and one-half years of service

he was honorably discharged. He then went to Philadelphia and secured a position as a clerk in Hubbell's drug store, on Chestnut Street above Broad Street. As a reward for his faithful services, Mr. Hubbell gave him a course in the Philadelphia College of Pharmacy, from which he was graduated in 1872.

Later, G. I. McKelway and H. A. Borell became partners in the business with Mr. Hubbell, and in a few years Mr. Hubbell retired from the business, and the drug store was run under the firm name of McKelway and Borell, continuing as such for several years, when Mr. McKelway bought out Mr. Borell's interest in the business. Henry A. Borell then purchased a drug store at 2043 Chestnut Street and owned this business until the time of his death.

Mr. Borell was married to Miss Kleinert of Mount Carbon, Pa., whose death occurred thirteen years ago. They had no children.

Up to the time of Mr. Borell's death, he was a charter member and director of the West End Trust Company; also a partner of the Rumsey-Borell Drug Company, 52d and Market Streets, Philadelphia, and conducted personally a drug store at 60th and Market Streets, Philadelphia. He became a member of the American Pharmaceutical Association in 1874.

Interment was had on April 17, 1913, in South Laurel Hill Cemetery, Philadelphia, the George Meade Post No. 1, G. A. R., attending, of which Post the deceased was a member.

J. W. E.

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UNITED STATES PUBLIC HEALTH SERVICE.

Ryder, L. W., Pharmacist. Granted two days' leave of absence March 15 and 20, 1913, under paragraph 210, Service Regulations. April 16, 1913.

Irwin, C. H., Pharmacist. Granted four days' extension of annual leave, on account of sickness, from April 2, 1913. April 16, 1913.

LaGrange, J. V., Pharmacist. Granted 22 days' extension of leave of absence on account of sickness from April 1, 1913. April 26, 1913.

Spangler, L. O., Pharmacist. Granted

three days' leave of absence from April 25, 1913. April 24, 1913.

Berkowitz, M. E., Pharmacist. Granted four days' leave of absence from April 21, 1913, under paragraph 210, Service Regulations. April 26, 1913.

LaGrange, J. V., Pharmacist. Granted one days' leave of absence, May 13, 1913, under paragraph 210, Service Regulations. May 13, 1913.

Carlton, C. G., Pharmacist. Granted seven days' leave of absence from May 7, 1913, under paragraph 210, Service Regulations. May 6, 1913.

Irwin, C. H., Pharmacist. Granted 30 days' leave of absence from June 3, 1913. May 13, 1913.

PROMOTION.

Pharmacist Charles H. Irwin promoted to Pharmacist of the second class, effective April 9, 1913. April 21, 1913.

Official:

RUPERT BLUE,
Surgeon General.

THE WORLD AND MAN.

The world is a wonderful sort of a place;
Man works and tries in it,
Laughs in it, cries in it,
Lives in it, dies in it—
All in a very short space.

The world has some lessons for thinkers to teach
And thousands of sermons for preachers to preach.
Some of us know it to call it by name,
Others know much of its sorrows and shame.
Some of us romp through its meadows in glee;
Others see things that men sicken to see;
Graft and corruption, sugar and sin,
Thousands of losers to one that can win;
Queer, swinelike men in the city's wild whirl,
Asking for gold, for the soul of a girl;
Pitiful pomp living over the way—
All of it seems like some grim, sordid play.

The world is a wonderful sort of a place:
Man gets his woes from it,
Takes what he knows from it,
Comes to it, goes from it—
All in a very short space.

—William F. Kirk.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.



ANDERSON, C. G.,
From 413 W. Division St., Chicago, Ill.
To 1920 Sedgwick St., Chicago, Ill.

MEADE, HAROLD B.,
From Washington, D. C.
To 4822 N. Warnock St., Philadelphia, Pa.

COOPER, MISS ZADA M.,
From 124 Bloomington St., Iowa City, Ia.
To Red Oak, Ia., R. F. D. No. 2.

CREIGHTON, MISS MARY L.,
From 2246 Fourth St., San Diego, Calif.
To Scio, Ohio.

ELCOOK, WM W.,
From Ft. Bliss, Texas.
To Camp Gregg, Bayambang, P. I.

GITHENS, THOMAS P.,
From 1327 Pine St., Philadelphia, Pa.
To Rockefeller Institute, 66th St. and Ave.
W., New York City.

LEDERLE, A. L.,
From 32 Adams Ave. W., Detroit, Mich.
To Leland, Mich.

MAISEL, JOSEPH,
From 133 Third Ave., Brooklyn, N. Y.
To 866 Kelly St., New York, N. Y.

McMILLAN, DANIEL N.,
From 323 Washington St., Portland, Ore.
To 494 Washington St., Portland, Ore.

BILLINGS, HENRY M.,
From 28 W. 50th St., New York City
To So. Poland, Maine, care Forrest Walker.

MILLER, LAWRENCE JOHN,
From 610 Park St., McKeesport, Pa.
To Box 7, Sutersville, Pa.

O'GORMAN, T. V.,

From Ellis Island, N. Y.
To St. Joseph's Home, 209 W. 15th St.,
New York City.

REYNOLDS, GEO., Sgt. 1st Class, U. C., U.
S. A.,

From Ft. Bayard, N. Mexico.
To Presidio, San Francisco, Calif.

SCHENK, MRS. KANNIE K.,

From Durant, Okla.
To Deer Trail, Colo.

SCHLICHTING, A. E.,

From 520 Hill St., Ann Arbor, Mich.
To Agricultural College, N. Dakota.

SCHWARTZ, MAURICE P.,

From 2184 Talbot Ave., Indianapolis, Ind.
To 1026-30 Kentucky Ave., Indianapolis,
Ind.

VENNEMAN, H.,

From Ft. Snelling, Minn.,
To 200 W. Indiana Ave., St. Paul, Minn.

WARD, A. JAE,

From 2915 14th Ave., Denver, Colo.
To Arcade No. 1, Railway Exchange
Bldg., Denver, Colo.

WILSON, CHAS. F.,

From 200 E. 31st St., Chicago, Ill.
To 355 E. 30th St., Chicago, Ill.

TO RESIDENCE UNKNOWN.

DOUGLAS, ROBERT J.,

From Camp Jossman, P. I.

ORTH, GUSTAVE,

From Hot Springs, Ark.

SWEENEY, JAMES,

From Ft. Wayne, Michigan.

SHAW, CHAS. N.,

From Ft. McKinley, P. I.

NOSTRUMS IN AUSTRALIA.

In Australia the traders in nostrums are much exercised at certain recent legislation directed against the evil. The council of the Melbourne chamber of commerce has endorsed the protest made by the Sydney chamber of commerce against the regulations of the Board of Health of Western Australia requiring the publication of the formulas of infants' and invalids' foods and proprietary medicines. Replying to the protest, the minister, Mr. W. C. Angwin, has issued a statement that the regulations have been made under the provisions of the health act, which provide for the formulas appearing on the label or being deposited with the commissioner of public health. The health act contains certain drastic powers in connection with "patent medicines," and it is in order to have them effectively carried out that these regulations are now adopted. The sale of "patent medicines," for instance, containing deleterious drugs, may be prohibited, and the depositing of the formulas with the department will materially assist in the detection of any such deleterious substance. The regulation provides an alternative. The formulas may be deposited with the department instead of appearing on the bottle. All formulas deposited will be maintained in strict confidence. In regard to infants' and invalids' foods, the department is quite willing to permit the depositing of the formulas confidentially in the same manner as with "patent medicines." In the case of both "patent medicines" and infants' foods, the public should be able to know exactly what is being bought; when makers are unwilling to take the people into their confidence, then the public health department should know exactly what is there. Undoubtedly a great deal of fraud is perpetrated in this matter, and it is to prevent that, and also prevent injury to health from a use of such medicines and food that these regulations are now put forward.—*Journ. A. M. A.*, I. LX, 844.

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

"ON TO NASHVILLE."

NASHVILLE is the "City of Opportunity," it is the "Rock City" of the "Volunteer State." It is the "Athens of the South," and the Capital of the great State of Tennessee, and it is for one week, August 18-23, to be the home of that great, "homeless" body of pharmaceutical scientists, the A. Ph. A.

It is our desire to tell you, as best we can, how she came by all these synonyms.

In the first place a hunter by the name of Gasper Mansker and two companions had the "opportunity" of passing through this "Garden of Eden," and finding the scenery so beautiful, game so plentiful and the soil so rich and productive, they spread its praises in every settlement they passed through, and in their wanderings back East, towards civilization, stopped at Watauga settlement, in what is now East Tennessee, near Knoxville, where they passed some little time. Here they made the acquaintance of Captain James Robertson, who, becoming interested in the story, decided, with a few of his fellow-settlers, to investigate. Accordingly, in February, 1779, they started for Big Salt Lick, near Cedar Bluff, on Cumberland river, formerly known as Shawnee river, which had been so glowingly described by Mansker.

After a month's travel, during which time they walked about 500 miles, they arrived at the end of their journey, Sulfur Dell, our baseball park. In Sulfur bottom, between the spring and the river, they cleared away the cane brake and planted the first field of corn, this being required by law to establish their title to the land they had come to settle on. In May, 1780, these settlers met to adopt rules to govern the colony, and the settlement on the Bluff was called Nashboro,

in honor of General Francis Nash, who was killed at the battle of Germantown about three years before. This name it retained until April, 1784, when an act of the N. C. Legislature changed the name to Nashville. Tennessee was admitted into the Union in 1796, and at that time was divided into three districts and eleven counties. The Nashville district was called Mero, in honor of Governor Mero of New Orleans, and was composed of three counties, Davidson, Sumner and Tennessee. The city was incorporated in 1806. The Legislature first met here in 1812-1815 and again in 1826 to 1843, when it was made the permanent capital.

Nashville is an ideal Convention City. Look at it on the map. You will see that it can be reached in a 12-hour ride by one-third of the people of the United States. Its hotel accommodations are adequate and up to date. Its transporta-



UNION STATION, NASHVILLE.

tion facilities are the simplest, cheapest and best in the whole country. You can board a car at any point in the city and go to any other point for one fare, five cents. All car lines in the city and all interurban lines pass through one central station, located on the original Square of four acres, which was set apart in the original plan of the city for public buildings, and on which now stands the County Courthouse, the City Hall and the Market House. This central station is built on the spot formerly occupied by the home of Captain James Robertson.

Nashville is well supplied with assembly hall facilities, which range in seating capacity from 8500 down, and the rooms are well lighted, well ventilated and the acoustics good. Some large organizations have been her guests in recent years, among which have been the Southern Baptists' Convention, the National Organization of T. P. A., the United Confederate Veterans, the International

Society of Christian Endeavor, and has twice entertained the American Medical Association, once in 1857 and again in 1890, at which meeting there were present about 1200 physicians, and others directly and indirectly connected with the Association. The first physician who opened shop in Nashville was Dr. John Sappington, the originator of Sappington pills. He located there in 1785 and did a thriving business until the mystery of his pills was found out, when he lost his practice and standing.

Nashville has always been famous for two things, churches and schools, to which is due her title, the Athens of the South. In an abridged copy of the "American Universal Geography," published March, 1806, I find this entry under the head of principal towns in Tennessee: "Nashville N-lat 36 . The courts for the district of Mero are semi-annually held here. It has two houses for public worship, and a handsomely endowed academy, established in 1780."

As an evidence of her great importance as an educational center, it is only necessary to state that the Trustees of the Geo. Peabody Fund have recently



PARTHENON AND THOMAS MONUMENT, NASHVILLE.

given a million and a half dollars to found a college for Southern teachers to be located here, and the buildings for the same are now being constructed. Andrew Carnegie, during the month of May, gave one million dollars to Vanderbilt University, and the city has many other educational institutions for both white and black, male and female.

A High School building has just been completed at a cost of \$350,000, and Y. M. C. A. and Y. W. C. A. buildings have just been completed, costing \$200,000 and \$100,000, respectively, the funds for each of which were raised by public subscription in thirty days' time. The view from the top of the Y. M. C. A. building is magnificent, and will repay every visitor who will take the time to go up there and "view the landscape o'er."

As a manufacturing center, Nashville possesses great advantages, and her enterprises are many and varied. Her jobbing and manufacturing business amounts to \$210,575,000 a year. Cheap fuel, almost without limit, lies right at her doors. There is just now being completed the Hydro-Electric plant of Ocoee, with an estimated horsepower of 160,000, which will furnish her factories with power for every purpose required.

Nashville is one of the greatest hardwood markets in the country, her lumber

interests amounting to \$11,000,000 annually. She furnishes the red cedar for making the famous "Faber pencils." She makes 204,000 stoves annually, which are shipped from the Atlantic to the Pacific. Nashville retail trade amounts to \$35,000,000 a year. The display windows in her retail districts are the wonder and admiration of all strangers who come to the city. A year or two since a noted actor, in passing through the city to fill an engagement at Louisville, Ky., wandered off uptown and became so enchanted with the pretty show windows that he forgot all about his train, and when he came to himself, his train was gone and he had to secure a special to put him in Louisville in time to meet his engagement. In a contest offered by a New York firm, a few years since, for the best looking woman in the United States, the prize was awarded to a Nash-



STATE CAPITOL, NASHVILLE.

ville girl. The first gun fired in the Spanish-American war was fired from the gunboat Nashville, and you may see this same gun when you come to the American Pharmaceutical Association meeting, in the City Hall on the Public Square.

Nashville's parks and playgrounds are adequate and beautiful. The largest of these is Centennial park, near Vanderbilt University, which contains the only exact reproduction of the Parthenon in the world, in the shadows of which was recently enacted the great Greek pageant, mentioned so often recently in the newspapers and magazines. The entire production was a Nashville creation and the play was put on by Nashville talent.

A Nashville photographer enjoys the distinction of having captured first prize

in two national contests. In the council halls of the nation Nashville has furnished some noted men, among whom may be mentioned two Presidents, Jackson and Polk, leaders of distinction before the Civil War, and in recent years two justices of the Supreme Court, Howell E. Jackson and H. H. Lurton; two cabinet officers, J. M. Dickinson, President Taft's secretary of war, and J. C. McReynolds, the present attorney general.

And now to prove that all this praise of Nashville is not "home grown," I must before closing quote what Dr. Winchell, in his "Sketches of Creation," has to say regarding Nashville and her surroundings. He says: "I ascend the cupola of the magnificent State House at Nashville and take a survey of the surrounding country. On every side spread out the broadly undulating fields of grass and corn into the illimitable distance. A finer agricultural scene was never witnessed. A more beautiful landscape—diversified with broad clearings, waving crops, tufts of magnolia and poplar, shining mansions, withdrawing vales and purple atmosphere—it has never been my privilege to gaze upon."

Now, in conclusion, Nashville makes her best bow to the American Pharmaceutical Association and extends a pressing invitation to every member to come on August 18-23 to the Land of the Magnolia and Mocking Bird, where the watermelon is smiling and good fellowship waits, and receive a true and hearty Southern welcome, and, don't forget, "You'll never be happy 'till you see Nashville."

JAMES O. BURGE.



NASHVILLE HOTEL RATES.

MAXWELL HOUSE.

European Plan.....	80 Rooms.
\$1.00 and \$1.50.....	Without Bath.
\$2.00 and \$3.00.....	With Bath.

SAVOY.

European Plan.....	80 Rooms
\$1.00 and \$1.50.....	Without Bath.
\$2.00 and \$2.50.....	With Bath.

BISMARCK.

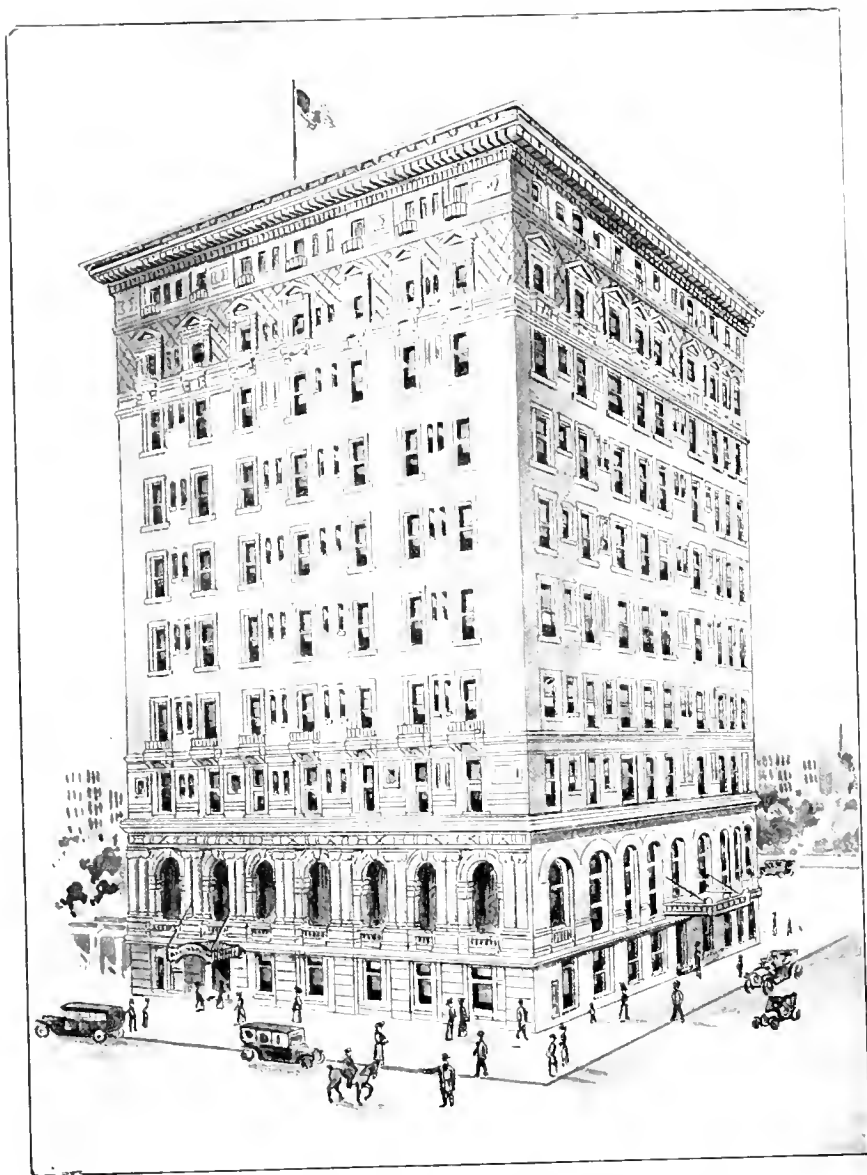
European Plan—Gentlemen only.....	54 Rooms.
\$1.00 Without Bath.....	\$1.50 With Bath.

HOTEL TULANE.

American Plan.....	200 Rooms
\$2.00 and \$3.00.....	Without Bath.
\$3.50 and \$4.00.....	With Bath.

DUNCAN HOTEL.

American Plan.....	125 Rooms.
\$3.00 and \$4.00....	Running Water in Every Room.



HOTEL HERMITAGE, OFFICIAL A. P. H. A. HEADQUARTERS.
OFFICIAL HEADQUARTERS: HOTEL HERMITAGE.

European plan.

250 Rooms and Bath.....	\$2.00, \$2.50, and \$3.00 per Day.
\$2.00 rooms, 2 persons.....	\$ 4.00
\$2.50 rooms, 2 persons.....	4.50
\$3.00 rooms, 2 persons.....	5.00
Parlor bedrooms	8.00
Parlor bedrooms, 2 persons.....	10.00

WOOD ALCOHOL BLINDNESS.

IN a recent number of the *Journal of the A. M. A.*,* Dr. Hiram Woods, of Baltimore, gives an account of two recent cases of blindness following the use of wood alcohol, one from its external application and the other from taking it internally.

In the first case the disastrous results followed the application of wood alcohol to the muscles of the legs and hips of a person suffering from supposed rheumatism. In the second case blindness followed the drinking of whiskey which contained 30 per cent of wood alcohol.

The paper also refers to a large number of other cases of death or of total or partial blindness following the use of wood spirit.

An interesting and singular feature of the subject is the variation in susceptibility of different individuals, some being injuriously affected by as small a quantity as a teaspoonful, while others can apparently consume large quantities without serious consequences.

The exact way in which wood alcohol acts upon the central nervous system is not well understood. It is known, however, that it is less easily eliminated than ethyl alcohol, and it is believed to be oxidized in the system to formaldehyde. The specific cause of blindness is atrophy of the optic nerve, and probable destruction of the ganglion of the retinal cells.

The poisonous qualities of wood alcohol have been so frequently mentioned during recent years that it would seem impossible that any retail druggist could be unacquainted with them, and a failure on his part to attach a poison label to the substance and a caution against its medicinal use would probably make him legally responsible for damages resulting from its administration.

While it is believed that pharmacists generally observe due caution in the dispensing of wood alcohol, it is a well known fact that many of the toilet waters supplied by barbers' supply houses, and the cheaper brands of flavoring extracts sold to country store-keepers still contain this pernicious article.

Dr. Woods' paper presents the following important conclusions and recommendations:

Methyl, or wood alcohol, in any of its forms, and all methylated preparations as well, are dangerous poisons, menacing both life and sight.

It is used as an adulterant of and substitute for, grain alcohol in cheap whisky and other alcoholic beverages, not to mention Jamaica ginger, lemon extract and many other essences and flavoring fluids.

Methyl alcohol is largely used in the preparation of many proprietary and patent medicines, (?) witch hazel, domestic liniments, as well as bay rum, cologne water, Florida water and other perfumes.

The symptoms of acute poisoning are gastro-intestinal disturbances, more or less severe, accompanied by abdominal pain, general weakness, nausea, vomiting, vertigo, headache, dilated pupils and blindness. If recovery does not occur, there is marked depression of the heart's action, sighing respiration, cold sweats, delirium, unconsciousness, coma and death.

The diagnosis can hardly be mistaken. Methyl alcohol poisoning presents a picture unlike that of any other intoxication. Acute abdominal distress, followed by blindness, should always awake suspicion of methyl alcohol poisoning.

The prevention of poisoning by this insidious drug can only be brought about by prohibiting (or rendering unprofitable) the sale of deodorized wood alcohol in all its forms. The number of deaths may, meantime, be limited by putting all methylated preparations on the

*Vol. LX, p. 1762.

list of poisons and prosecuting all persons adulterating foods and drinks with it. Labeling it with the notice, "This fluid, taken internally, is likely to produce blindness," will certainly have a deterrent effect.

Poisoning by inhalation of the fumes of methyl alcohol generally occurs when the exhalations are mixed with rebreathed air, as in varnishing the interior of beer-vats, closets or small rooms, etc. It is also highly probable that in susceptible subjects repeated or even single methylated "alcohol rubs" may produce poisoning symptoms, through absorption of the spirit by the skin.

With reference to the charge that many proprietary and patent medicines contain wood alcohol, it is only fair to state that the editor has examined the reputed formulas of many such preparations, and has found only one which is stated to contain that substance, this being a veterinary preparation recommended for external use.

J. H. BEAL.



THE FEDERAL ANTI-NARCOTIC SITUATION.

READERS of the *Journal* will have noticed reports of the formation of the National Drug Trade Conference, called in pursuance of a resolution adopted at the Denver meeting, and the minutes of the several meetings of the Conference and of its Executive Committee. The present issue contains a report of the latest meeting of the Executive Committee and a copy of the bill as finally agreed upon by the Committee and Dr. Hamilton Wright, United States Opium Commissioner, who has been largely responsible for the movement in favor of the proposed legislation.

The draft of the bill now in the hands of Dr. Wright will probably be introduced into Congress during the present month and, if legislative conditions are favorable, is likely to become a law without much further modification. Although strikingly different from the Harrison Bill as originally introduced, the present bill is a lineal descendant from the former. The first Harrison bill contained what seemed to the representatives of the drug trade to be many dangerous uncertainties of statement, and at the successive meetings of the Conference was revised in such a way as to make some of the uncertainties certain, and some of the obscure provisions less obscure.

While the bill as thus reframed at the first two meetings of the Conference was far from meeting the wishes of the drug trade representatives, it at least served the purpose of calling attention to the defects of the original draft and had the effect of converting those in favor of Federal supervision of narcotics to the much simpler draft which is now proposed.

Neglecting minor details, the principal provisions of the draft as it now stands are as follows:

Section 1 drops the original cumbersome classification into producers, importers, exporters, wholesale manufacturers, wholesale dealers, and retailers, and embraces all of these under a single class, and requires every one who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away any opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof, to register with the Collector of Internal Revenue of his district and pay an annual tax of \$1.00. The original bill proposed to

levy a tax of \$100.00 on wholesale manufacturers, dealers, etc., and of \$25.00 upon retailers.

Section 2 provides that the aforesaid drugs cannot be delivered, except in pursuance of an order written upon an official order blank supplied by the Collector of Internal Revenue. The purchaser is required to retain a copy of his order for two years, subject to inspection by the proper officials, and the seller likewise must preserve his copy of the order for the same length of time. These order blanks can be obtained only from the Collector of Internal Revenue, and can be supplied only to persons registered under the Act. It is made unlawful for any other person than the one to whom the order blanks are furnished to use them for the obtaining of the drugs, or for the holder of the blank to obtain the drugs for any other purpose than for use in the regular course of business or professional practice.

This order blank is proposed as a substitute for the elaborate system of special tax stamps, records and detailed reports of purchases and sales provided for in the original bill.

The use of the order blank is unnecessary in the following cases:

(a) For the dispensing of the drugs to a patient by a physician, dentist, or veterinarian registered under the Act, in the course of his professional practice only, when he is in personal attendance upon the patient to whom it is dispensed.

(b) To the dispensing of the drugs by a pharmacist in pursuance of a written, signed, and dated prescription, issued by a physician, dentist, or veterinarian registered under the Act, the pharmacist being required to preserve such prescription for a period of two years.

(c) For the shipment of any of the drugs to a person in any foreign country. The order blanks are to be supplied to registered dealers at approximate cost.

Section 3 provides that the Collector of a district may require of any registered person a statement of the quantity of the drugs purchased and from whom received during the three months immediately preceding the time when the request for such statement is made.

Section 4 makes it unlawful for any person to send, ship, carry, or deliver the named drugs and their preparations, etc., in interstate commerce, but exempts from this provision common carriers, the employes of registered persons, and the delivery of the drugs in pursuance of written prescriptions of physicians, dentists, and veterinarians, who are registered under the Act, to patients who are under the immediate personal care of such physicians, dentists, and veterinarians.

Section 5 provides that the duplicate order forms and prescriptions required to be preserved shall be open to the inspection of duly authorized agents and officers of the Treasury Department, or of any state, territory, or municipality, or the District of Columbia, who are charged with the enforcement of any law or ordinance prohibiting or regulating the prescribing, dispensing, etc., of the aforesaid drugs. The Collector is also authorized to furnish, at a moderate price, to duly authorized officials copies of statements and reports filed in his office, and to furnish to any person a list of the registered dealers in his district.

Section 6 exempts from the provisions of the Act preparations which do not contain more than 2 grains of opium, or 1-4th grain of morphine, or 1-12th of a grain of heroin, or 1 grain of codeine, or their salts or derivatives, in a fluid or

avoirdupois ounce; also, liniments and ointments and other preparations, prepared for external use only, which do not contain more than the above mentioned quantities, provided all of the excepted preparations are dispensed as medicines and not for the purpose of evading the provisions of the Act.

This section also exempts preparations of coca leaves which do not contain cocaine.

Section 7 is simply a declaration that certain laws relating to the collection, etc., of internal revenue taxes, so far as applicable, shall apply to the provisions of this Act.

Section 8 makes it unlawful for any person who has not registered and paid the special tax to have in his possession or control any of the aforesaid drugs, but exempts possession by an employe of a registered person, having control by virtue of his employment, or possession by a person when the drugs have been prescribed in good faith by a physician, dentist, or veterinarian registered under the Act, or possession by warehousemen holding them for a person registered, or common carriers, or possession by Federal, state or municipal officers having possession for the purpose of enforcing the provisions of any law.

Possession by an unregistered person, except as above named, is presumptive evidence of violation, and the burden of proof is placed upon the defendant to show that his possession is lawful.

Section 9 provides a penalty for violation of the requirements of the Act consisting of a fine of not more than \$2,000, or imprisonment for not more than five years, or both, at the discretion of the court.

Section 10 authorizes the Commissioner of Internal Revenue to appoint agents, deputy collectors, inspectors, chemists, etc., for the enforcement of the Act.

Section 11 makes an appropriation of \$150,000 for the enforcement of the law.

Section 12 provides that the Act shall not be construed to impair, alter, amend or repeal any of the provisions of the Food and Drugs Act of 1906, or of the act which prohibits the importation and use of opium for other than medicinal purposes.

From a review of the proposed law it will be seen that it does not place any restriction upon the class of persons who may register as dealers in the named narcotic drugs, except in so far as such restrictions are found in the provisions relating to the use of the official order blank, and prohibiting the use of the order blank for the purpose of obtaining them for any other than a lawful purpose, and this for the very good reason that the Federal Government has no power under the taxing clause of the Constitution to do otherwise. A long line of well considered decisions establishes the fact that, while the Federal Government may levy a tax upon any property or occupation, even to the extent of total prohibition, the tax must be uniform, and must be accepted from every one who makes a proper tender thereof. This is apparently the limit of Federal authority under the taxing power.

As a consequence, it follows that any effective limitation upon the sale and distribution of the drugs when made wholly within state territory must be imposed by the states themselves. All that Federal authority can do is to provide the means whereby, through registration, etc., the quantity and character of the

drugs can be traced to the last distributor, and to make the information available to state, territorial and municipal officers.

If the states fail to adopt proper statute regulations, or if their officials fail to properly enforce the local laws, then the Federal enactment will have but little effect in controlling the improper use of the named narcotic drugs.

The benefit of the Federal enactment will, therefore, lie mainly in the requirement that all dealers be registered and make returns when required, and the use of the official order blank, by which means the drugs can be traced from the time of their introduction into the country until they reach the hands of the registered dealer who disposes of them to the consumer.

It is even a question whether some of the provisions respecting the use of the order blank and sales on prescriptions do not infringe upon the state's exclusive police powers, but since the principal law officers of the government are inclined to defend the constitutional soundness of these provisions, the skirts of the drug trade will at least be clear if the courts do not up-hold the legislation.

While it would be unwise to say that every provision of the draft is entirely satisfactory, it is only just to the framers of the bill to add that no provision was inserted without careful consideration and without viewing it from many angles, and it is to be hoped that those who are inclined to find fault with any of the separate details of the bill will suggest provisions which will be equally effective and less objectionable than the ones to which they object.

The Editor will be glad to give space to criticism and suggestions which any members may desire to offer.

J. H. BEAL.



HARRISON BILL PASSES THE HOUSE.

SINCE the preceding remarks were placed in type the news comes from Washington that the Conference Bill, introduced by Hon. Burton Harrison, of New York, as H. R. 6282, has passed the House, with some very minor changes in phraseology which the lawyers of the House thought necessary to make certain of its provisions perfectly plain. None of these amendments affect the general purport of the bill, and there is no apparent reason why the drug trade should not be perfectly satisfied with them.

The passage of the measure through the Senate is likely to be a slower and more difficult operation, though if the President should exert his influence in its favor, which it is expected he will do, the bill will likely become a law before the end of the special session.

J. H. BEAL.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

VARIATION IN THE SUSCEPTIBILITY OF FROGS TO OUABAIN.

CHAS. E. VANDERKLEED, PHAR. D., AND PAUL S. PITTENGER, PHAR. D.

During the course of the experiments on variation in susceptibility of guinea pigs to ouabain, the results of which are presented in another paper (see JOURNAL for May, p. 558), a series of tests were run simultaneously on frogs. The method used was the "one hour" method. In the following tables the doses given are in grams per gram body weight:

AUGUST, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 38.5 to 57.5 grams.

Temperature of water in frog tank, 26.5° to 29.5° C.

Temperature of room, 25.5° to 28.5° C.

Dose	Weight	Results
0.00000030.....	42.0	— Beats.
0.00000031.....	40.0	— Occasional beat.
x0.00000032.....	45.5	+ Stopped. Extra contraction on stimulation.
0.00000032.....	55.0	+ Stopped. Extra contraction on stimulation.
0.00000032.....	56.5	+ Stopped. Extra contraction on stimulation.
0.00000032.....	57.5	+ Stopped. Extra contraction on stimulation.
0.00000032.....	42.5	— Non-absorption.
0.00000033.....	38.4	+ Stopped. No extra contraction on stimulation.*
0.00000034.....	44.0	+ Stopped. No extra contraction on stimulation.
0.00000034.....	44.0	+ Stopped. No extra contraction on stimulation.
0.00000036.....	45.0	+ Stopped. No extra contraction on stimulation.
0.00000039.....	40.0	+ Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000032.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 30 to 62.3 grams.

Temperature of water in frog tank, 26.5° to 29.5° C.

Temperature of room, 25.5° to 28.5° C.

Dose	Weight	Results
0.00000036.....	40.0	— Beats.
0.00000036.....	34.0	+ Stopped.
0.00000037.....	34.0	— Slight beat in auricle.*
0.00000037.....	43.5	— Slight beat in auricle.
0.00000037.....	36.0	— Beats.
0.00000037.....	37.5	— Beats.
0.00000038.....	34.0	— Beats.
0.00000038.....	30.0	+ Stopped. Extra contraction on stimulation.
x0.00000038.....	37.5	+ Stopped. Extra contraction on stimulation.
0.00000038.....	62.3	+ Stopped. No extra contraction on stimulation.
0.00000039.....	50.5	— Beats.*
0.00000039.....	66.6	— Auricles still contracting.*
0.00000039.....	46.0	+ Stopped. No extra contraction on stimulation.
0.00000039.....	37.0	+ Stopped. No extra contraction on stimulation.
0.00000039.....	48.0	+ Stopped. No extra contraction on stimulation.
0.00000040.....	40.0	+ Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000038.

*"Out of order."

Female Bull-frogs (Rana catesbiana) from Pennsylvania.

Weights ranged from 38.5 to 54 grams.

Temperature of water in frog tank, 24.5° to 26.5° C.

Temperature of room, 24° to 25.5° C.

Dose	Weight	Results
0.00000036.....	48.2	— Beats.
0.00000040.....	41.0	— Beats.
0.00000045.....	41.0	— Beats.
0.00000047.....	43.0	— Beats.
0.00000050.....	42.0	— Auricles still contracting.
0.00000051.....	38.5	— Auricles still contracting.
x0.00000052.....	39.6	+ Stopped. Extra contraction on stimulation.
0.00000052.....	40.0	+ Stopped. Extra contraction on stimulation.
0.00000052.....	40.5	+ Stopped. Extra contraction on stimulation.
0.00000052.....	38.5	+ Stopped. Extra contraction on stimulation.
0.00000052.....	48.5	+ Stopped. Extra contraction on stimulation.
0.00000053.....	40.5	— Non-absorption.*
0.00000053.....	48.0	+ Stopped. No extra contraction on stimulation.
0.00000053.....	54.0	+ Stopped. No extra contraction on stimulation.

M. L. D. considered to be 0.00000052.

SEPTEMBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 20.1 to 61.1 grams.

Temperature of room, 23.5° to 25.5° C.

Temperature of water in frog tank, 21° to 23° C.

Dose	Weight	Results
0.00000030.....	29.1	— Beats.
0.00000032.....	59.2	— Beats.
0.00000036.....	61.1	+ Contracts on stimulation.
0.00000036.....	33.6	— Beats.
0.00000036.....	35.2	— Beats.
x0.00000038.....	30.3	+ Contracts on stimulation.
0.00000038.....	20.1	+ Contracts on stimulation.
0.00000040.....	33.3	+ No contraction on stimulation.
0.00000042.....	34.2	+ No contraction on stimulation.
0.00000044.....	38.6	+ No contraction on stimulation.

M. L. D. considered to be 0.00000038.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 61.5 to 88.7 grams.

Temperature of room, 23° to 25.5° C.

Temperature of water in tank, 21° to 23° C.

Dose	Weight	Results
0.00000025.....	88.7	— Beats.
0.00000028.....	83.	— Beats.
0.00000030.....	70.9	— Occasional beat.
x0.00000030.....	61.5	+ Contracts on stimulation.
0.00000030.....	78.0	+ Contracts on stimulation.
0.00000032.....	73.2	+ No contraction on stimulation.
0.00000032.....	61.6	+ Contracts on stimulation.
0.00000034.....	82.7	+ No contraction on stimulation.

M. L. D. considered to be 0.00000030.

*“Out of order.”

OCTOBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights range from 24.7 to 29.3 grams.

Temperature of room, 24.5 to 25° C.

Temperature of water in tank, 18 to 19.5° C.

Dose	Weight	Results
0.00000038.....	27.2	— Beats.
0.00000040.....	29.0	+ Contracts on stimulation.*
0.00000040.....	27.2	— Beats.
0.00000044.....	26.0	— Beats.
0.00000050.....	29.3	— Beats.
0.00000053.....	26.5	— Beats.
0.00000055.....	24.7	— Occasional beat.
x0.00000055.....	25.7	+ Contracts on stimulation.
0.00000055.....	28.3	+ Contracts on stimulation.
0.00000057.....	25.2	+ No contraction on stimulation.
0.00000057.....	25.7	+ No contraction on stimulation.

M. L. D. considered to be 0.00000055.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 18.1 to 37.1 grams.

Temperature of room, 23.5 to 25.5° C.

Temperature of water in tank, 18° to 19.5° C.

Dose	Weight	Results
0.00000032.....	31.5	+ Contracts on stimulation.*
0.00000036.....	28.5	+ Contracts on stimulation.*
0.00000036.....	28.2	— Beats.
0.00000038.....	27.2	— Beats.
0.00000046.....	31.2	— Occasional beat.
0.00000046.....	22.2	— Beats.
0.00000048.....	20.0	— Beats.
0.00000050.....	37.1	— Beats.
0.00000053.....	26.8	— Occasional beat.
x0.00000055.....	25.0	+ Contracts on stimulation.
0.00000055.....	18.1	+ Contracts on stimulation.
0.00000057.....	26.0	+ No contraction on stimulation.

M. L. D. considered to be 0.00000055.

NOVEMBER, 1911.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.6 to 36.5 grams.

Temperature of room, 11.5° to 24° C.

Temperature of water in tank, 13° to 15° C.

Dose	Weight	Results
0.00000038.....	28.5	— Beats.
0.00000044.....	36.4	— Beats.
0.00000055.....	28.2	— Beats.
0.00000060.....	30.2	— Beats.
0.00000064.....	31.5	— Beats.
0.00000200.....	29.0	— Beats.
0.00000250.....	34.0	— Occasional beat.
0.00000250.....	30.2	— Beats.
0.00000270.....	27.4	— Occasional beat.
0.00000300.....	29.0	— Occasional beat.
x0.00000300.....	25.5	+ Contracts on stimulation.
0.00000300.....	14.6	+ Contracts on stimulation.
0.00000300.....	33.0	+ Contracts on stimulation.
0.00000300.....	29.0	+ No contraction on stimulation.
0.00000335.....	31.0	+ Contracts on stimulation.
0.00000350.....	36.5	+ Contracts on stimulation.
0.00000350.....	26.0	+ No contraction on stimulation.

M. L. D. considered to be 0.00000300.

*“Out of order.”

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 25.5 to 36.3 grams.

Temperature of room, 11.5° to 22° C.

Temperature of water in tank, 13° to 14° C.

Dose	Weight	Results
0.000002.....	29.5	— Beats.
0.000002.....	28.9	+ Contracts on stimulation.*
0.000002.....	27.0	— Occasional beat.
0.0000023.....	25.5	— Beats.
0.0000023.....	27.0	— Occasional beat.
0.0000023.....	36.3	+ Contracts on stimulation.*
0.0000025.....	31.0	+ Contracts on stimulation.
0.0000025.....	31.3	+ Contracts on stimulation.
0.0000025.....	26.1	+ Contracts on stimulation.
0.0000027.....	30.7	+ Contracts on stimulation.
0.0000030.....	33.0	+ Contracts on stimulation.
0.0000034.....	28.3	+ No contraction on stimulation.

M. L. D. considered to be 0.0000025.

DECEMBER, 1941.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 16.36 to 27 grams.

Temperature of room 18° to 23° C.

Temperature of water in tank, 12° to 16° C.

Dose	Weight	Results
0.00000055.....	23.0	— Beats.
0.00000060.....	24.4	— Beats.
0.00000065.....	24.7	— Occasional beat.
0.00000070.....	27.0	— Auricle beats.
0.00000090.....	23.0	— Beats.
0.00000100.....	17.36	— Beats.
0.00000100.....	18.6	— Occasional beat.
0.00000125.....	20.9	+ Contracts on stimulation.
0.00000125.....	24.2	+ Contracts on stimulation.
0.00000125.....	19.5	+ Contracts on stimulation.
0.00000150.....	20.2	+ No contraction on stimulation.
0.00000200.....	21.9	+ No contraction on stimulation.
0.00000300.....	18.0	+ No contraction on stimulation.

M. L. D. considered to be 0.00000125.

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 16.8 to 25.1 grams.

Temperature of room, 16° to 23° C.

Temperature of water in tank, 13° to 16° C.

Dose	Weight	Results
0.00000055.....	25.1	+ No contraction on stimulation.*
0.00000055.....	18.83	— Beats.
0.00000060.....	19.5	— Beats.
0.00000070.....	17.6	— Beats.
0.00000080.....	22.7	— Beats.
0.00000085.....	16.8	+ Contracts on stimulation.*
0.00000085.....	19.5	— Beats.
0.00000085.....	20.0	— Beats.
0.00000090.....	20.7	+ Contracts on stimulation.*
0.00000090.....	19.5	— Beats.
0.00000095.....	20.2	— Occasional beat.
0.00000100.....	18.0	+ Contracts on stimulation.
0.00000100.....	20.2	+ Contracts on stimulation.
0.00000125.....	23.8	+ No contraction on stimulation.
0.00000150.....	20.2	+ No contraction on stimulation.

M. L. D. considered to be 0.000001

*“Out of order.”

JANUARY, 1912.

Male Leopard Frogs† (Rana pipiens) from Illinois.

Weights ranged from 20 to 35.8 grams.

Temperature of room, 16 to 21° C.

Temperature of water in tank, 5° to 7° C.

Dose	Weight	Results
0.0000025.....	22.5	— Beats.
0.0000035.....	23.9	— Occasional beat.
0.000004.....	23.5	— Beats.
0.000004.....	20.0	— Beats.
0.000005.....	29.7	— Beats.
x0.000005.....	22.0	+ No contraction on stimulation.
0.000006.....	21.5	+ Contracts on stimulation.
0.000006.....	35.8	— Auricle beats.*
0.000007.....	21.0	+ Contracts on stimulation.
0.000007.....	22.7	+ Contracts on stimulation.

M. L. D. considered to be 0.000005.

Female Leopard Frogs† (Rana pipiens) from Illinois.

Weights ranged from 12 to 35.7 grams.

Temperature of room, 18° to 19.5° C.

Temperature of water in tank, 4.5° to 7.5° C.

Dose	Weight	Results
0.000001.....	21.1	— Beats.
0.000001.....	23.5	— Beats.
0.000001.....	22.9	— Slight beat.
0.000002.....	22.5	— Beats.
0.000003.....	18.3	— Beats.
0.000003.....	12.0	+ Contracts on stimulation.*
0.000004.....	35.7	— Auricle beats.*
x0.000004.....	22.0	+ No contraction on stimulation.
0.000004.....	19.4	+ No contraction on stimulation.
0.000004.....	19.4	+ No contraction on stimulation.
0.0000045.....	19.2	+ No contraction on stimulation.
0.0000045.....	23.0	— Beats.
0.000005.....	19.5	+ Contracts on stimulation.
0.0000055.....	15.7	+ No contraction on stimulation.
0.000007.....	20.0	+ No contraction on stimulation.
0.000008.....	29.5	+ No contraction on stimulation.

M. L. D. considered to be 0.000004.

FEBRUARY, 1912.

Male Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.2 to 25. grams.

Temperature of room, 18° to 20° C.

Temperature of water in tank, 7° to 7.5° C.

Dose	Weight	Results
0.000002.....	20.0	— Beats.
0.000003.....	19.6	— Beats.
0.000003.....	23.0	— Beats.
0.000003.....	21.1	— Beats.
0.000004.....	14.2	— Beats.
x0.000004.....	14.2	+ Contracts on stimulation.
0.000004.....	22.0	+ Contracts on stimulation.
0.000005.....	18.8	+ No contraction on stimulation.
0.000005.....	17.0	— Non-absorption.*
0.000005.....	17.2	+ Contracts on stimulation.
0.000005.....	16.39	— Beats.*
0.0000055.....	19.0	+ Contracts on stimulation.
0.0000055.....	23.4	+ No contraction on stimulation.
0.0000055.....	22.0	+ Contracts on stimulation.
0.000006.....	21.2	+ Contracts on stimulation.
0.000006.....	25.0	+ No contraction on stimulation.
0.0000065.....	16.7	+ No contraction on stimulation.
0.0000070.....	21.7	+ No contraction on stimulation.
0.0000080.....	21.7	— Non-absorption.*

M. L. D. considered to be 0.000004.

†Badly frozen when received.

*“Out of order.”

Female Leopard Frogs (Rana pipiens) from Illinois.

Weights ranged from 14.3 to 31.5 grams.

Temperature of room, 18° to 20° C.

Temperature of water in tank, 7° to 7.5° C.

Dose	Weight	Results.
0.000002.....	22.1	— Beats.
0.000003.....	31.5	— Auricle beats.
0.000003.....	14.3	— Beats.
0.000003.....	29.4	— Occasional beat.
0.000003.....	16.2	+ No contraction on stimulation.*
x0.000004.....	20.0	+ Contracts on stimulation.
0.000004.....	21.4	+ Contracts on stimulation.
0.000005.....	23.0	+ Contracts on stimulation.
0.000005.....	20.5	+ No contraction on stimulation.
0.0000055.....	17.8	+ Auricle contracts on stimulation.
0.000006.....	20.2	+ No contraction on stimulation.

M. L. D. considered to be 0.000004.

MARCH, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 17.3 to 31.2 grams.

Temperature of water in tank, 7° to 8° C.

Temperature of room, 18.5° to 22° C.

Dose	Weight	Results
0.000001.....	25.1	— Beats.
0.000001.....	31.2	— Beats.
0.0000012.....	30.5	— Beats.
x0.0000015.....	17.3	+ Auricle contracts on stimulation.
x0.0000015.....	29.5	+ Contracts on stimulation.
0.0000015.....	25.7	+ Contracts on stimulation.
0.0000020.....	23.8	+ No contraction on stimulation.
0.0000025.....	25.2	+ No contraction on stimulation.
0.0000030.....	21.9	+ No contraction on stimulation.

M. L. D. considered to be 0.0000015.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 18.8 to 30.6 grams.

Temperature of water in tank, 7° to 14° C.

Temperature of room, 16.5° to 22° C.

Dose	Weight	Results
0.000001.....	18.8	— Beats.
0.0000015.....	23.2	— Beats.
0.0000015.....	29.7	+ No contraction on stimulation.*
0.0000015.....	25.5	+ No contraction on stimulation.*
0.0000015.....	25.8	— Beats.
0.0000020.....	19.2	— Beats.
0.0000020.....	23.3	— Beats.
0.0000020.....	29.2	— Occasional beats.
x0.0000025.....	27.2	+ Contracts on stimulation.
0.0000025.....	27.2	+ No contraction on stimulation.
0.0000025.....	24.0	+ Contracts on stimulation.
0.0000030.....	30.6	+ Contracts on stimulation.
0.0000035.....	24.5	+ No contraction on stimulation.
0.0000035.....	26.8	+ No contraction on stimulation.

M. L. D. considered to be 0.0000025.

*“Out of order.”

APRIL, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 22.8 to 41 grams.

Temperature of room, 18° to 22° C.

Temperature of water in tank, 11° to 13° C.

Dose	Weight	Results
0.0000009.....	41.0	— Beats.
0.0000009.....	39.3	— Beats.
0.0000010.....	34.0	+ No contraction on stimulation.*
0.0000010.....	38.2	+ Beats.
0.0000010.....	34.0	— Beats.
0.0000010.....	24.0	+ No contraction on stimulation.*
0.0000012.....	26.0	— Occasional beat.
0.0000012.....	32.0	— Occasional beat.
0.0000015.....	22.8	— Occasional beat.
0.0000015.....	29.3	+ No contraction on stimulation.*
0.0000015.....	28.5	— Beats.
0.0000017.....	27.0	+ No contraction on stimulation.
0.0000017.....	30.0	+ Contracts on stimulation.
0.000002.....	29.0	+ No contraction on stimulation.
0.000002.....	31.0	+ No contraction on stimulation.

M. L. D. considered to be 0.0000017.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 25.8 to 44.5 grams.

Temperature of room, 18° to 22° C.

Temperature of water in tank, 11° to 13° C.

Dose	Weight	Results
0.0000008.....	40.0	— Beats.
0.0000009.....	39.5	— Beats.
0.0000009.....	44.5	— Auricle beats.
0.000001.....	25.8	+ Contracts on stimulation.
0.000001.....	28.0	+ Auricle contracts on stimulation.
0.0000015.....	41.0	+ No contraction on stimulation.
0.000002.....	30.5	+ No contraction on stimulation.
0.0000025.....	30.5	+ Contracts on stimulation.
0.000003.....	33.2	+ No contraction on stimulation.

M. L. D. considered to be 0.000001.

MAY, 1912.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 23.5 to 48.9 grams.

Temperature of room, 24° to 28.5° C.

Temperature of water in tank, 21° to 27.5° C.

Dose	Weight	Results
0.0000008.....	24.5	— Auricle beats.
0.0000009.....	48.9	— Beats.
0.0000009.....	23.7	— Beats.
0.0000010.....	30.6	— Beats.
0.0000010.....	23.5	+ Contracts on stimulation.
0.0000010.....	30.0	+ Contracts on stimulation.
0.0000012.....	35.4	+ No contraction on stimulation.
0.0000014.....	33.5	+ No contraction on stimulation.
0.0000015.....	33.0	+ No contraction on stimulation.
0.0000020.....	28.0	+ No contraction on stimulation.

M. L. D. considered to be 0.000001.

*“Out of order.”

JUNE, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 12.7 to 26.1 grams.

Temperature of laboratory, 27° to 30° C.

Temperature of water in tank, 24° to 25° C.

Dose	Weight	Results
0.0000006.....	18.5	— Beats.
0.0000008.....	20.0	— Beats.
0.0000009.....	20.0	— Beats.
0.00000095.....	26.1	— Beats.
0.0000010.....	12.7	— Beats.
x0.0000010.....	25.5	+ Contracts on stimulation.
0.0000015.....	19.5	+ Contracts on stimulation.

M. L. D. considered to be 0.000001.

JULY, 1912.

Male Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 25.5 to 48.5 grams.

Temperature of room, 27.5° to 30° C.

Temperature of water in tank, 25° to 26° C.

Dose	Weight	Results.
0.0000002.....	27.2	— Beats.
0.00000025.....	37.6	+ Contracts on stimulation.*
0.0000003.....	27.5	+ Contracts on stimulation.*
0.0000003.....	35.6	— Occasional beat.
0.00000035.....	18.5	— Beats.
0.00000035.....	25.5	— Beats.
x6.0000004.....	29.1	+ Contracts on stimulation.
0.0000004.....	26.8	+ No contraction on stimulation.
0.00000045.....	28.0	— Beats.*
0.00000045.....	26.1	+ No contraction on stimulation.
0.0000005.....	26.2	+ No contraction on stimulation.

M. L. D. considered to be 0.0000004.

Female Leopard Frogs (Rana pipiens) from New Jersey.

Weights ranged from 20 to 42 grams.

Temperature of room, 26° to 29.5° C.

Temperature of water in tank, 22.5° to 27.5° C.

Dose	Weight	Results.
0.0000002.....	24.5	— Beats.
0.00000025.....	24.3	— Auricle beats.
0.00000025.....	30.0	— Auricle beats.
0.00000030.....	29.5	+ Contracts on stimulation.*
0.00000030.....	38.0	— Beats.
0.00000030.....	34.5	— Beats.
x0.00000035.....	42.0	+ Contracts on stimulation.
0.00000035.....	26.0	+ Contracts on stimulation.
0.00000040.....	28.0	+ No contraction on stimulation.
0.00000060.....	20.0	+ No contraction on stimulation.
0.00000080.....	20.8	+ No contraction on stimulation.
0.0000012.....	21.1	+ No contraction on stimulation.

M. L. D. considered to be 0.00000035.

Summary of smallest amounts required to produce systolic stoppage of the heart in one hour—the amounts stated representing milligrams per gram weight of frog:

	Males Illinois	Females Illinois	Males New Jersey	Females New Jersey	Average
August, 1911.					
Lab. 25.5—28.5° C.....	0.00032	0.00038	.....	.....	0.00035.
Tank 26.5—29.5° C.....					
September, 1911.					
Lab. 23.—25.5° C.....	0.00038	0.00030	.....	.....	0.00034
Tank 21—23° C.....					

*“Out of order.”

October, 1911. Lab. 23.5—25.5° C.	0.00055	0.00055	.....	.....	0.00055
Tank 18—19.5° C.					
November, 1911. Lab. 11.5—24° C.	0.00300	0.00250	.....	.....	0.00275.
Tank 13.—15° C.					
December, 1911. Lab. 16—23° C.	0.00125	0.00100	.....	.....	0.00112.
Tank 12—16° C.					
January, 1912. Lab. 16—21° C.	0.00550	0.00350	.....	.....	0.00450.
Tank 4.5 to 7.5° C.					
February, 1912. Lab. 18—20° C.	0.00400	0.00400	.....	.....	0.00400
Tank 7—7.5° C.					
March, 1912. Lab. 16.5—22° C.			0.00150	0.00250	0.00200
Tank 7—14° C.					
April, 1912. Lab. 18—22° C.			0.00170	0.00100	0.00135
Tank 11—13° C.					
May, 1912. Lab. 24—28.5° C.				0.00100	0.00100
Tank 21—27.5° C.					
June, 1912. Lab. 27—30° C.			0.00100	.....	0.00100
Tank 24—25° C.					
July, 1912. Lab. 26—30° C.			0.00040	0.00035	0.00037
Tank 22.5—27.5° C.					
Average	0.00214	0.00175	0.00115	0.00121	0.00161

The extreme range for the male Illinois frogs is 0.00032 to 0.00550 or from 85 percent below to 157 percent above the average of 0.00214. The range for the female Illinois frogs is 0.00030 to 0.00400 or from 83 percent below to 128 percent above the average of 0.00175. The range for the male New Jersey frogs is 0.00040 to 0.00170 or from 65 percent below to 48 percent above the average of 0.00115. The range for the female New Jersey frogs is 0.00035 to 0.00250 or from 71 percent below to 107 percent above the average of 0.00121. That the variation is not in accordance with the temperatures, except in a very general way, is readily seen by comparing the results for October, November, and December, and again for June and July. This does not preclude the possibility of obtaining valuable information as to the strength of preparations if each lot of frogs be "standardized" at the time of making the assay. That the variation in the susceptibility of frogs, however, is many times as great as that of guinea pigs is readily apparent by comparing these results with those set forth in another paper presented to this Section.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

THE DRUGGIST AND THE PAY TELEPHONE. A CONTRIBUTION TO THE HISTORY OF THE INTRODUCTION AND USE OF THE PAY TELEPHONE IN THE DRUG STORE.

GEO. S. HUMPHRIES AND F. C. GODBOLD, NEW ORLEANS, LA.; W. H. LAMONT, ST.
LOUIS, MO.; B. E. PRITCHARD, PITTSBURGH, PA.; J. O. BURGE, NASHVILLE, TENN.

THE NEW ORLEANS STORY.

About four years ago, working under the free lunch system of telephones, the druggists of the city of New Orleans were harassed and inconvenienced by their customers, and on several occasions, because of the antagonistic tactics adopted by the Cumberland T. & T. Co., in opposition to party lines, the service was, to say the least, very unsatisfactory. Parties desiring to use the phones were annoyed by the long delay in getting the person whom they desired. Under these conditions the O. P. Association appealed to the N. A. R. D. Telephone Committee at headquarters, and in reply to this appeal the late Mr. McDonald wrote to the Association that if they would stand his expense to New Orleans, he would endeavor to straighten out matters. After discussing the situation from all sides, it was decided to decline the offer.

A few months later, The Independent Telephone Company, of St. Louis, asked the City Council for a franchise. The druggists became active and favored the granting of the said franchise. The Cumberland T. & T. Co., hearing of this action, requested the Orleans Pharmaceutical Association to allow them to send Mr. McDonald and their general soliciting agent to New Orleans, with a view of recommending a service which would be satisfactory. Complying with that request, a meeting between the representative of the Telephone Company and the Association was arranged, and on March 31st, 1908, an agreement was entered into between the above named parties for pay phones to be installed in each drug store, on a basis of \$4.50 per month for the Telephone Company, and 50 percent of all above that amount to go to the druggist and 50 percent to the Telephone Company. No guarantee as to the amount of receipts.

Realizing the up-hill work that this would entail upon the Committee, it being a new venture, a clause was inserted stating that the contract was not to be binding until after a six months' satisfactory trial. When the Committee called upon the druggists with this proposition they met with all kinds of objections, some druggists going so far as to state that if they put a pay phone in their stores for six months, that before the expiration of that time they would be out of business. With all the objections, however, the Committee succeeded in securing

a sufficient number of druggists to sign the agreement, and it was put into effect. At the expiration of the six months' trial, it was gratifying indeed to learn that not a single druggist in the city of New Orleans would part with the pay system, and every drug store was in line.

The benefits from the nickel-in-the-slot machine, both to the druggist and the Cumberland T. & T. Co., are very gratifying, some of the druggists receiving as high as \$60.00 per month for their share of the tolls. It is doubtful if the druggists would part with the pay system, as the service is satisfactory. The customers are pleased, and thank the druggist with a pleasant smile after using the phone and paying for same.

GEORGE S. HUMPHRIES,

Member of Telephone Committee.

THE PHILADELPHIA STORY.

Mr. Garwood gives the following information: He states that from 1895 until 1905 he represented the Telephone Company in all matters brought up by the Druggists' Association. He remembers from time to time of entertaining representatives of the Druggists' Association, but to the best of his recollection he was never in receipt of any official communication from them or received a call from an official representative.

As he remembers the druggists' pay station conditions in Philadelphia during that period, the druggists first asked the Telephone Company to put in pay stations, when they were not equipped with sufficient plant to enable them to put in the telephones. Afterwards, the Telephone Company attempted to install pay stations in all drug stores, but that the druggists could not agree with the Telephone Company, claiming that the commission to be allowed them was not sufficient for the labor performed and the space given over for the service. Then, later, the druggists saw the advantage to them of having pay stations in the stores, but the Telephone Company was not willing to pay them the commission demanded. Unfortunately, Mr. Garwood does not remember the basis of the commission offered at that time, and there is no record in this office to furnish this information.

W. W. HENDERSON, Cashier Bell Telephone Company.

THE PITTSBURGH STORY.

In the beginning there was no relation, not even the much despised "poor relation" between the druggists of this city and the Telephone Companies. The druggist simply took his place in line with the multitude and took what he could get, as one of the proletariat.

As soon as the people learned that there was a telephone at the drug store, free to all comers at nothing per, the lines got busy at once, at the cost of the druggist, of course. Sometimes when there chanced to be a break in the stream of neighbors long enough to permit it, the druggist got his chance to do a little business on the line himself. Any customer who might want to telephone an order to the drug store occasionally was surprised to hear central say in response to the call for the druggist's number, "All right," but in most instances it would be "Line's busy." And all this time the druggist paid the freight.

Of course, it would be manifestly unfair to lay the blame for such conditions

at the door of the Telephone Companies, for it was the fault of the subscriber, who was allowing himself to be imposed upon. The loss fell, perhaps, as heavily upon the company as upon the druggist who permitted the abuse to continue. So when, through the efforts of the Telephone Committee, the Western Pennsylvania Retail Druggists' Association took up the matter of improving conditions, it did not take very long to convince the Telephone Company officials that much business was being done over its lines for which it received no remuneration; while, at the same time, the druggist was receiving neither remuneration nor recognition for service rendered to the dear, cheap public.

In the beginning of the "pay-as-you-call" system, the drug store phone outfit merely consisted of a wall set and a slot box into which the person desiring to use it was required to place one dime. The druggist whose box receipts showed over \$10 per month received 10 percent of all moneys over that amount. It was soon demonstrated that a 10-cent call was too high to become popular, and returns were not satisfactory to either the telephone company, the druggist or the public. Right here is where we succeeded in getting the Bell Telephone Company to adopt a more liberal policy all around, and in consequence we now have a contract under the terms of which the Company, at its own expense, installs a booth with complete outfit in the drug store, and the person calling must deposit a nickel before the party called is placed on the line. The druggist guarantees \$5 per month for service, and for all moneys over that amount he receives 20 percent commission, on local calls only. For long-distance calls, a smaller payment, but in the average drug store these are not frequent and as they usually involve a division of fees between two or more telephone companies, the commission must naturally be less.

The Telephone Company pays the druggist a fair sum for any messenger service required of the operator.

Conditions, and our relations with the Telephone Company, since this contract between the Bell Company and the W. P. R. D. A. has been in force (since October, 1909), have been very satisfactory, and the old-time loss and annoyance have been replaced by a paying side-line. The installation of booths resulted in greatly increasing the number of patrons, as did the reduction from 10 cents to 5 cents also.

The next thing the druggist must do is to have nerve and business sense enough to treat the stamp selling nuisance in a similar manner. The success of the telephone revolution shows conclusively that the public will pay for what it wants, but so long as the druggist is satisfied to supply its needs for nothing, let the fool fellow have his fill of it. That's how many people look at the free lunch proposition.

B. E. PRITCHARD, Secretary W. P. R. D. A.

THE ST. LOUIS STORY.

Individual protest against the free telephone abuse in St. Louis took the form of a combined action of the Retail Druggists of the city during the administration of Charles Reimer, as President of the St. Louis Retail Druggists' Association, and resulted in an ultimatum being issued to the Kenloch Telephone Company to either install slot phones or remove the phones from the drug stores owned by the signers of the protest.

Much work towards combined action of the druggists was done by A. S. Ludwig, R. C. Reilley, E. A. Bernius, M. J. Noll, and Mr. Reiner, assisted by Joseph McDonald, of the American Telephone Company.

Much publicity was given the movement, and it appears from a casual observation to be surely crowned with success.

Almost every druggist signed a personal letter to the Kenloch Telephone Company, terminating his telephone contract and authorizing the removal of the instrument. These letters, or a major portion of them, were turned over to the Committee to be presented to the Company, when a rumor was circulated that through this combined action of the Association there might follow some legal complications, and there were but a few hours left to get the letters into the hands of the Company. Some of the intrepid allowed the letters to go in and some had the phones taken out, but a majority of phones remained in use, unaffected by the action.

The slot fight was lost, and the Kenloch phones are today in operation without a slot or pay device.

During the administration of H. O. A. Huegel, as President of the St. Louis Retail Druggists' Association, a telephone problem was presented by the Bell Telephone Company; that of withdrawing a scale percent of contents payment and place all phones, active or otherwise, productive or non-productive, upon a flat basis of 10 percent. Mr. Huegel entered into the fray with the same vim and activity that marks his every movement in pharmacy, and took the matter to the Public Service Commission of St. Louis and had every druggist in town up in arms against the Bell Telephone Company.

It is needless to say that the Bell Telephone Company did not place all the slot phones upon the same basis, and today the druggists are using the Bell phone under a contract of this nature:

The druggists guarantee 15 cents per day and get 10 percent of the contents of the box on a basis of 15 cents per day; or they guarantee 20 cents per day and get 20 percent of the contents on a 20 cents per day basis; or they guarantee 30 cents per day and get 30 percent; or 40 cents and get 40 percent.

This gives the good telephone corner a fine profit upon the space occupied by the Bell phone, and from all outward appearances and confidential expressions by the druggists, the telephone question is settled for some time to come.

W. H. LAMONT, St. Louis, Mo.

THE NASHVILLE STORY.

I find that the agitation started about five or six years ago, when the public use of the druggists' telephone became almost unbearable, both to the exchange and to the druggist, who was kept out of many sales by his line being busy, on account of which the Company had to furnish more operators. Tab was kept for ten days on the number of calls through drug store telephones and it was found that they ran from twenty to fifty, with an average of about forty. So, about two years ago, before the present arrangement was made, a committee of druggists, of which Mr. Ira B. Clark was Chairman, called on the manager and tried to come to some understanding, but failed at the time, and after about two years the present contract was entered into, the principal features of which are: The

contract is for five years, the Company furnishes the booths free, the first three calls each day go to the Telephone Company, or \$4.50 per month, and all over that amount is divided equally between the Company and the druggist. The druggist gets 10 percent on all long-distance calls. He pays the same for his calls as others do, but to the City Hospital, Police and Fire Departments are free.

An extension line runs from most of the booths to the prescription counter, for which the druggist pays \$1.00 per month. Many of the downtown druggists have two phones, one being free, for which they pay \$7.00 per month, the same as other subscribers, but agree that they will not use this phone except for business calls. The contract has been in force about three and one-half years, and all parties appear to be perfectly satisfied with the arrangement. The druggist's telephone is a business getter instead of an annoyance to himself and an expense to the Company, as it was before the agreement.

J. O. BURGE.

PROTECTING THE PRICE.

Many manufacturers insist on the price of their product being maintained on a basis that insures good profit to every one who sells it. Why? Simply because they understand human nature and can sense the trend of the times. The manufacturer who simply "encourages" the maintenance of a fixed price never did and never will amount to anything as a price protector. The manufacturer who says he is "trying" to protect prices because he is "in sympathy with the retailer" is simply begging the question and has no backbone. Such an one does not deserve to have any co-operation from the retailer and should be turned down hard every time.

The wise manufacturer, the man who has the right stuff in his make-up, and who says emphatically to every one who sells his product that he will not permit their being sold without a profit, and insists firmly on his stipulation being carried out for the very excellent reason that it protects his own business is on the right track and will succeed.

Successful price maintenance requires something more than encouragement. You can encourage a wagon all you want to, but that will not make it move. The wagon must have some motive power attachment, a real force only will produce the desired effect. Hypnotism won't do the stunt.

The successful manufacturer of the future will know that a profit *must* be made on his product in order that "his life may be long in the land." That manufacturer who fails to recognize the right and necessity for the storekeeper to have a fair profit and does not compel him to take it, will fall by the wayside "and the place thereof shall know him no more."—*The Pittsburgh Druggist*.

Contributed and Selected

INFLUENCE OF ALCOHOL UPON THE TOXICITY OF DIGITALIS FOR GUINEA PIGS.

CHARLES C. HASKELL, INDIANAPOLIS, IND.

In a recent paper on biological standardization, Eggleston¹ draws attention to the fact that in Hatcher's cat method the presence of alcohol does not influence the results when the digitalis bodies are tested. He suggests that this may not be the case when the guinea pig or frog is used as a test animal. The following experiments were carried out upon guinea pigs and rabbits in the attempt to secure definite information regarding this point. The preparations tested were ordinary U. S. P. tinctures of digitalis, containing originally 48 percent alcohol, in which form they were used in the experiments recorded in Table I. All injections were made subcutaneously with Hitchens' syringe² and the animals were observed for twenty-four hours. It was found convenient to cover the needle hole with collodion to prevent oozing of injected fluid. Doses are given in fractions of a cubic centimeter per gram body weight.

TABLE I.
A. Tests Upon Guinea Pigs.
Tr. No. 1.

Date	Survived	Died	Minimum Lethal Dose
6-11-12 .....	.004 .004 .004 .0065 .007.		.007+

B. Tests Upon Rabbits.
Tr. No. 2.

9-26-12 .....	.003 .006 .007 .008		.008+
9-27-12			

Portions of the two tinctures used in the preceding experiments were evaporated to a semi-fluid consistency on the water bath and this residue suspended in a volume of distilled water one-half that of the amount of tincture taken. When the injections were made an equal amount of distilled water was added, bringing the volume dose up to that of untreated tincture.

TABLE II.
A. Tests Upon Guinea Pigs.

Tr. No. 1 evaporated on water bath; residue suspended in distilled water.

Date	Survived	Died	Minimum Lethal Dose
6-14-12		0.0080 0.0075 0.0060	0.0045
6-15-12		0.005 0.005 0.0045	
6-17-12		0.0040	
10- 4-12	0.004	0.005	

B. Tests Upon Rabbits.

Tr. No. 2 evaporated on water bath; residue suspended in distilled water.

9-26-12	0.002 0.004		0.006
9-27-12	0.005	0.006	
9-28-12	0.005	0.006 0.006	
9-30-12		0.006 0.006 0.006	
10- 1-12	0.005		

It is evident from these figures that the original tinctures possessed considerably less toxicity for guinea pigs and rabbits than they did after removal of the alcohol. Several factors must be considered, however, before the assumption can be made that this difference is due to the antagonistic action between digitalis and alcohol. It is possible that heating the tinctures upon a water bath might cause a decomposition of the active glucosides into bodies of greater toxicity. The simplest way to decide this is to make the alcoholic strength of the suspension the same as that of the original tincture, and this was done in some instances by taking up the residue with 50 percent alcohol, in others, by using an equal volume of 95 percent alcohol, when the double-strength aqueous suspension was injected, whereby the suspension was brought up approximately to the original volume and alcoholic strength of the tincture.

TABLE III.
A. Tests Upon Guinea Pigs.

Aqueous suspension from Tr. No. 1 with alcohol up to 48% added.

Date	Survived	Died	Minimum Lethal Dose
6-15-12	0.007		0.008
10- 3-12		0.044 0.016	
10- 4-12	0.007	0.008	

B. Tests Upon Rabbits.

Aqueous suspension from Tr. No. 2 with alcohol up to 48% added.

9-28-12	0.008	0.009	0.009
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TABLE IV.
A. Tests Upon Guinea Pigs.
Aqueous suspension from Tr. No. 1. 95% alcohol. Separate injection sites.

Date	Survived	Died	Minimum Lethal Dose
6-17-12		0.007 0.007	0.0045
10- 3-12		0.006 0.008	
10- 4-12	0.0035 0.0040		

B. Tests Upon Rabbits.
Aqueous suspension from Tr. No. 1. 95% alcohol. Separate injection sites.

9-30-13		0.007 0.007 0.008 0.008 0.006 0.006 0.006	.006

From this, it would seem that when alcohol is injected simultaneously with the treated tincture the toxicity of the latter is no greater than that of the original tincture; or, in other words, the heating and drying did not, in themselves, apparently increase the toxicity of the tincture. As further confirmation, one aqueous suspension was compared with the original tincture by means of Cushny's frog-heart method, and the strength found to be practically the same.

Another point, however, is whether this decreased toxicity of digitalis in the presence of alcohol is due to a true antagonism between the two substances or due to some local action of the alcohol. To decide this, a series of injections was made into guinea pigs and rabbits, the aqueous suspension and 95 percent alcohol being used in equal volumes, but the injection sites being different. The results are given in Table IV.

From these results it would seem that the protective power of alcohol against poisoning by digitalis is due to some local action of the alcohol, because when the digitalis solution and the alcohol are injected into different spots the former appears to have fully as much toxicity for rabbits and guinea pigs as where no alcohol is used. From appearances at the end of 24 hours, the digitalis seemed entirely absorbed whether alcohol was present or not.

It is clearly evident, however, that when digitalis preparations are tested by subcutaneous administration to guinea pigs or rabbits, account must be taken of the alcoholic content of such preparations, because the results will be markedly influenced by the presence of considerable amounts of alcohol.

Experiments, which will soon be published, have been carried out upon frogs, using the one-hour method, and it has been found that alcohol to the amount of 25 percent has no influence upon the results. The dilution of most galenical preparations necessary for testing by Cushny's method reduces the alcoholic contents to this figure when normal saline or water is used as a diluent.

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PHYTOCHEMICAL NOTES.*

73. OIL FROM MENTHA CITRATA

R. C. ROARK.

Volatile oils of various species of mint have long been known and are used in large quantities, but the oil obtained from *Mentha citrata* Ehrh. appears to have received but little attention until comparatively recently.

In the *Cyclopedia of American Horticulture*, 1903, in the article "Mentha" by Lyster H. Dewey, this statement appears, following a botanical description of the *Mentha citrata*—"The fragrant lemon-scented oil is distilled for use in making perfumes."

In the Report of Schimmel & Co., for April, 1904, p. 95, there is an account of a chemical examination of the oil from this plant. The yield of oil from young, not flowering, but fresh plants, without roots, was about 0.2 p. c. The oil was of a pale yellow color, had an odor suggestive of lavender oil, and possessed the following constants: $d_{15}^{\circ}=0.8826$; $n_D^{20}=-5^{\circ}35'$; ester number=31.28, corresponding to 10.95 p. c. linalyl acetate; soluble in two and more volumes of 70 p. c. alcohol. From the same plant a distillate was obtained from the frozen leaves in about the same yield. The constants of this oil were $d_{15}^{\circ}=0.8895$; $n_D^{20}=-1^{\circ}41'$; ester number=111.28, corresponding to 38.95 p. c. linalyl acetate; soluble in two and more volumes of 70 p. c. alcohol.

In the exhibit¹ of E. Moulié at the Florida State Fair, Tampa, 1906, there were samples of the "dried *Mentha citrata* flowers (No. 10); "powdered *Mentha citrata* leaves, for sachet bags" (No. 7); "pomade, by enfleurage, of the *Mentha citrata* leaves for blending and coloring purposes" (No. 26); "pomade, by enfleurage, of the *Mentha citrata* leaves for blending and perfuming purposes" (No. 27); "cologated water distillate of *Mentha citrata*" (No. 32); "volatile of *Mentha citrata* (Bergamot mint) on its water distillate" (No. 41), and finally a "stock syrup of *Mentha citrata*" (No. 47). In the descriptive catalogue of this exhibit it is stated by Moulié that the volatile oil of *Mentha citrata*, or Bergamot mint as it is sometimes called, was "originated" in 1892.

For several years *Mentha citrata* has received the attention of Dr. R. H. True and his collaborators in the Bureau of Plant Industry. It was at the suggestion of Dr. True that roots, sent from Washington, were planted in the garden of the Northern Station for the Cultivation of Medicinal Plants at Madison. As a result, a very small amount of oil was distilled during the summer of 1909,² but not enough to work with. During the summer of 1910 a somewhat larger amount of oil was distilled.³ Although insufficient for a thorough investigation, it sufficed for a preliminary examination.

The oil had a clear yellow color, an intense but rather pleasant odor, and had the following properties, viz., $d_{22}^{\circ}=0.895$; refractive index at $19.5^{\circ}=1.4555$; optical rotation in a 200 mm. tube= $-17^{\circ}.6$.

Small amounts of oil, 5 cc., were shaken with a 30 p. c. solution of sodium

*From the laboratory of Edward Kremers.¹Descriptive catalogue of the Franco-American Florida Floral Perfumery²See Report for 1909, made by the Agent to Dr. True.³See Report for 1910, made by the Agent to Dr. True.

bisulphite; two samples were treated at room temperature and two others were heated in a simmering water bath, for about 20 minutes. After standing some time the resulting volume of oil was read in an ordinary cassia flask.

The results were as follows:

- 5 cc. of oil heated with bisulphite solution, vol.=4.85 cc.
- 5 cc. of oil heated with bisulphite solution, vol.=4.80 cc.
- 5 cc. of oil treated with bisulphite solution at room temperature, vol.=4.85 cc.
- 5 cc. of oil treated with bisulphite solution at room temperature, vol.=4.80 cc.

Percentage of aldehydes=3.50 p. c. The above results indicate that it apparently makes no difference whether the aldehydes are shaken out either at room temperature or at the temperature of a water bath.

A larger amount of oil, 50 cc., was then treated similarly. The bisulphite was separated from the oil, sodium carbonate added to excess, and the liquid distilled. No oil separated from the distillate, which, however, had a perceptible odor. The oil, shaken out of the aqueous distillate, had a very pleasant ethereal odor and was very volatile, passing off with the ether vapor.

The oil from which the aldehydes had been removed by the bisulphite solution, was washed carefully with a dilute solution of sodium carbonate, then with distilled water, and finally dried. Portions of this oil were saponified by boiling with an excess of approximately N/2 alcoholic potassa for 30 minutes on the water bath in a flask fitted with a reflux condenser.

- (1) 1.71 grams oil required for saponification 0.2694 g. KOH. Sap. No.=230.0.
- (2) 0.882 grams oil required for saponification 0.2071 g. KOH. Sap. No.=234.7.

Computed as linalyl acetate this corresponds to from 80.50 to 82.15 p. c.

The whole of the oil was then saponified in the same way. After saponification, the odor of the oil was changed, a lavender-like odor being noticed. The saponified oil in a 100 mm. tube gave an optical rotation of $-15^{\circ}.85$.

The saponified oil was removed from the excess of alkali by steam distillation and was separated, washed, and dried in the usual manner. The amount of oil was too small for fractionation. A portion, 10 cc., of this oil was acetylated by boiling for 3 hours with an equal volume of acetic acid anhydride, with the addition of a gram or so of anhydrous sodium acetate, in an acetylation flask. After acetylation, the oil had an odor still more suggestive of that of lavender oil.

The acetylated oil was separated, washed thoroughly with a dilute solution of sodium carbonate and with distilled water, and then dried. Portions of this oil were saponified with the following results:

- 1.741 grams oil required for saponification 0.3175 g. KOH. Sap. No.=182.
- 1.759 grams oil required for saponification 0.3259 g. KOH. Sap. No.=185.

Computed as linalyl acetate this corresponds to from 63.70 to 64.75.

Although the presence of linalyl acetate has only been assumed and not at all proven, this discrepancy between the original ester content and the lower ester content of the acetylated oil is in harmony with the assumption of the presence of linalool, which is partly decomposed by the acetic acid anhydride during the acetylation process.

The alkaline solution from which the saponified oil had been removed by steam distillation, was diluted, acidified with sulphuric acid, and again subjected to steam distillation. A strong odor of sulphur dioxide was noticed, thus revealing that some of the aldehyde hydroxy sulphonate had not been removed by washing. A small amount of oil collected on the surface of the distillate. Barium

carbonate was added in excess, the precipitate filtered off, the filtrate evaporated to a small bulk, again filtered, and allowed to evaporate to dryness over sodium hydroxide. Leaf-like crystals were deposited. These were dissolved in a small quantity of hot water, the solution filtered, and after the addition of a drop of dilute nitric acid, silver nitrate was added. This precipitated a salt which in a few seconds turned brown and then black. This mixture was heated, the black substance was filtered off, and upon chilling the filtrate, a white salt was obtained. This salt was unstable, turning dark upon standing. The salt was filtered off, dried on porous plate over sulphuric acid, and the silver determined as silver chloride.

0.1006 g. salt gave 0.0858 g. silver chloride.

Percentage of silver in salt=64.24.

Calculated for silver acetate=64.66.

The solution of the barium as well as of the silver salt in hot water had a distinct fatty acid odor, thus indicating the presence of at least traces of other acids.

PHYTOCHEMICAL NOTES.*

78. AN UNUSUAL OIL OF WORMWOOD

R. C. ROARK.

Several years ago there was left at the laboratory a sample of oil of wormwood by Mr. Leander Drew, the well-known wormwood distiller of Sauk Co., Wisconsin. For more than half a century wormwood has been cultivated and distilled in Sauk Co. by three generations of the Drew family. This sample of about a pound had been set aside by Mr. Drew because of its unusual density. Mr. Drew could not account for the peculiarity of the sample which in other respects resembled the general run of oil of the same still and season.

The specific gravity of the oil determined by means of a Mohr-Westphal balance at 21.5° was found to be 1.000. The usual density of wormwood oil is supposed to vary between 0.925 and 0.955¹

The saponification number was first ascertained in the usual manner by boiling about 2 grams with 20 cc. N/2 alcoholic potassium hydroxide solution for 40 minutes. Two determinations yielded 151 and 150 respectively as saponification numbers.

Owing to the dark color of the reaction mixture, the method of saponification was modified in a manner that has proven effective on previous occasions. About 5 grams of oil were heated with 50 cc. of N/2 alcoholic potassium hydroxide solution for 90 minutes. The saponification mixture was transferred to a 500 cc. measuring flask and diluted with water so that the oil rose above the mark in the neck of the flask, thus yielding exactly 500 cc. of aqueous alkaline liquid. The reaction mixture thus diluted was next transferred to a separating funnel and the aqueous portion was drawn off through a filter. Of the filtrate, portions of 100 cc. were used for titration with standard acid. The dark oil being thus

*From the laboratory of Edward Kremers

¹G. H. K., The volatile oils, p. 685.

removed from the aqueous alkaline reaction mixture, titration with standard acid became much easier. 181 and 182 respectively were the saponification numbers obtained in two separate experiments.

After this the bulk of the oil, 297 grams, were saponified by boiling for 1 hour with 120 grams of potassium hydroxide dissolved in alcohol. The mixture was then subjected to steam distillation. After the alcohol had distilled over, the oil was collected, the last portion of which was green.

Sulphuric acid was now added in slight excess to the alkaline residue and the steam distillation resumed. An aqueous acid distillate was thus obtained. From the residual water there separated upon cooling a large quantity of white crystals in addition to tar. More crystals were obtained from the tar itself by boiling with hot water, etc. The original crystals, purified by re-crystallization, melted at 146 to 152°; those obtained from the tar at 152-153°. The combined crystals, purified still farther by re-crystallizing twice from water, melted at 156°.

Melting point, solubility, color test with ferric chloride, and odor test when heated with sulphuric acid and methyl alcohol all point to salicylic acid. The exact amount of salicylic acid present was not ascertained. After the saponification, 160 grams of oil had been recovered and 70 grams of tar, leaving a difference of 67 grams, the greater portion of which probably was salicylic acid.

The aqueous distillate obtained from the steam distillation of the acidified saponification reaction mixture was neutralized with an excess of barium carbonate and the solution of barium salts evaporated. Organic acids present were precipitated in the usual manner as silver salts, the precipitation, however, being conducted fractionally. Of the silver precipitates thus obtained silver determinations were made with the following results:

(1.) 0.230 grams of the first precipitate yielded, on ignition, 0.170 of metallic silver, corresponding to 73.9 p. c. silver: Calculated for silver formate 70.6 p. c. silver.

(2.) 0.319 grams of the third precipitate yielded, on ignition, 0.141 grams of metallic silver, corresponding to 44.2 p. c. of silver. Calculated for silver salicylate 44.1 p. c.

Of the oil distilled over from the alkaline reaction mixture, 10 cc. were acetylated in the usual manner. The acetylated oil yielded upon saponification 229.7 and 234.8 respectively as saponification numbers.

The remainder of the oil, 150 grams, or about 168 cc., was fractionated, the bulk, 125 cc., distilling over between 145 and 200°. It had a specific gravity of 0.9127 at room temperature. Allowed to stand for 11 days with 50 cc. of alcohol and 125 cc. of a saturated solution of sodium bisulphite, 40 grams of crystals, presumably the thujone addition product were obtained. The remaining oil upon fractionation was collected in three fractions:

- I—185 to 190°
- II—190 to 195°
- III—195 to 200°

At this point the study of this peculiar oil had to be broken off. Its principal interest lies in the unaccountable presence of salicylic acid. None of the other oils distilled semi-occasionally on the Drew farm is supposed to contain salicylic acid, neither are any of the weeds on the farm known to contain this acid.

ON CRYSTALLINE KOMBE-STROPHANTHIN

D. H. BRAUNS, PH. D., AND O. E. CLOSSEN, PH. B., DETROIT, MICH.

(Concluded from page 724)

The results with crystalline Kombe strophanthin on the heart of frogs are seen in Table III:

TABLE III. Focke Method.
Crystalline Kombe strophanthin.

9 23/10			
Dose per gm. of frog.	0.000001 gm.	0.0000015 gm.	0.000002 gm.
Intervals in minutes until ventricles stopped beating.	11 Min.	13 Min.	9 Min.
	14 "	14 "	10 "
	13 "	12 "	11 "
	16 "	12 "	10 "
	10 "	10 "	11 "
Average	13 Min.	12 Min.	10 Min.

9 27/10			
Dose per gm. of frog.	0.000001 gm.	0.000002 gm.	0.000004 gm.
Intervals in minutes.	19 Min.	16 Min.	10 Min.
	18 "	13 "	10 "
	15 "	10 "	8 "
	9 "	15 "	6 "
	10 "		10 "
Average	16 Min.	13.5 Min.	9 Min.

The lack of uniformity in the above table is not surprising to anyone who has observed the gradual and erratic cessation of the ventricle beat. The personal factor largely enters on account of their being no sharp end point. After the ventricle has stopped beating, a slight jar or noise will often induce muscular movements of the frog sufficient to force blood into the ventricle, when it will start up and beat again for some time.

We found the method very unsatisfactory and agree with Edmunds and Hale³⁸ when they say, "We believe that this method allows of greater variations and inaccuracies than any other method we employed."

If the frogs are examined at the end of one hour for complete stoppage of the heart in systole, a more uniform result is obtained, as appears from Table IV:

TABLE IV.
Crystalline Kombe strophanthin (fr. identified seed)

Dose per gm. of frog.	0.0000011 gm.	0.0000012 gm.	0.0000013 gm.
Conditions of heart at 1 hour.	3 beating 0 stopped	6 beating 1 stopped	0 beating 7 stopped

We believe any physiologic method for the assay of heart tonics should have as a basis some definite standard, e. g., Tr. Strophanthus, or better, crystalline strophanthin. The sharper and more definite the end point the more exactly can physiological reactions be compared.

³⁸Bulletin 48, Hygienic Laboratory, p. 15.

Protocol of the toxicity tests of November 1, 1910:

TABLE V.

Cry. K. strophanthin.				Amor. acid strophanthin from cry. K. strophanthin.				Standard Average Tincture.			
Wgt. frog.	Dilution 1 in 50,000		Result.	Wgt. frog.	Dilution 1 in 12,500		Result.	Wgt. frog.	Dilution 1 in 500		Result.
	Dose in gm. per gm.	Full dose			Dose in gm. per gm.	Full dose			Dose in cc. per gm.	Full dose	
13.5	.00000090	.605 cc.	L.	21.5	.0000026	.70 cc.	L.	16.5	.000066	.545 cc.	L.
14.0	.00000090	.63 cc.	L.	17.0	.0000028	.895 cc.	L.	16.5	.000066	.64 cc.	L.
16.0	.00000090	.72 cc.	L.	17.0	.0000028	.595 cc.	D.	17.5	.000069	.60 cc.	L.
14.0	.00000095	.665 cc.	D.	17.5	.000003	.655 cc.	D.	20.5	.000069	.70 cc.	D.
14.0	.00000095	.665 cc.	D.	17.5	.000003	.655 cc.	D.	17.5	.000072	.65 cc.	D.
14.5	.00000095	.69 cc.	D.	18.0	.000003	.675 cc.	D.	20.5	.000072	.74 cc.	D.

In the case of warm blooded animals the toxicity cannot logically be translated into heart action, since death is with them generally due to failure of respiration.

The toxicity for small warm blooded animals, when injected subcutaneously, is given in Table VI:

TABLE VI.

Animals used.	Crystalline Kombe strophanthin. Lethal dose per gram of animal.	Amorphous acid Kombe strophanthin. Lethal dose per gram of animal.	Standard Tr. K. Strophanthus. Lethal dose per gram of animal.
Guinea-pigs .....	.0000004 gm.	.0000010 gm.	.00095 cc.
Tame mice.....	.000009 gm.	.000025 gm.	.0005 cc.
Tame rats.....	.00006 gm.	.00005 gm.	.....
Wild rats.....	.000009 gm.	.00008 gm.	.0008 cc.

The guinea-pigs were invariably killed by failure of respiration and the heart was found to be in diastole. The rats and mice generally showed a failure of respiration before the heart action ceased, and the heart stopped in moderate systole.

Crystalline Kombe strophanthin, in aqueous solution, is changed into an amorphous acid strophanthin when boiled. As the toxicity of this amorphous acid strophanthin is only one-third that of the crystalline glucoside, it seemed important to obtain exact figures of this change.

A solution of crystalline Kombe strophanthin in pure water (1 in 2000) was vigorously boiled over a free flame for fifteen minutes, cooled and made up to volume. This tested against the unboiled portion showed a loss of about 15%.

A solution of gratus strophanthin (Ouabain Merck) (1-25,000) in pure water was vigorously boiled over a free flame for fifteen minutes, cooled and made up to volume. This tested against the unboiled portion showed about 10% loss.

As such a change is to be expected in the cold, although, of course, much more slowly, it is important to determine the keeping qualities under different conditions.

A water solution (1 in 2000) of this crystalline Kombe strophanthin was made up and kept in a cork-stoppered flask at room temperature. At the end of two weeks a beautiful growth of mould was present, and an assay showed it to have lost 50 percent of its activity.

Crystalline Kombe strophanthin and Kombe strophanthin (Merck) were then made up (1 to 200) with water containing 4/10% Trikresol and kept at room temperature in sealed containers; no loss appeared with the crystalline glucoside in three months. However, the amorphous preparation of Merck showed a loss of nearly 10 percent within the limits of error.

It was noted that a small amount of alcohol prevented the conversion into the amorphous acid strophanthin, and was taken advantage of in concentrating solutions.

We also found that at room temperature 10 percent alcohol preserves the activity of crystalline Kombe strophanthin.

The marked permanency of the tincture of *Strophanthus* has long been recognized. It seemed desirable, therefore, to examine this crystalline glucoside from identified Kombe seed in this respect.

Solutions of crystalline Kombe strophanthin (1 in 1000) were made up from time to time with 70% alcohol (and 2 cc. portions sealed in glass containers) and tested on frogs against the old solutions, with the results given in Table VII:

TABLE VII.

Permanency of crystalline Kombe strophanthin in 70% Ethyl Alcohol, kept at room temperature in sealed containers.

Date of Tests	Dose in gm. per gm.	Lived	Died	
March 13 and 15, 1911...	.000,001,0 .000,001,1 .000,001,2*	3 2 0	1 1 3	Solutions of June 27, 1910
	.000,001,0 .000,001,1 .000,001,2*	1 2 0	0 1 3	Solution freshly made from crystals.
October 28000,000,70	4	0	Computed from standard average tincture.
November 2 .....	.000,000,75	6	2
	.000,000,80	4	3	
	.000,000,85*	2	10	
	.000,000,70	2	0	Solution freshly made from crystals.
	.000,000,75	5	2	
	.000,000,80	1	5	
	.000,000,85*	0	4	
1912000,000,80	2	0	Solution of June 27, 1910.
July 24 .....	.000,000,85*	0	2
	.000,000,90	0	2	
July 25.....	.000,000,80	2	0	Solution of Sept. 25, 1911.
	.000,000,85*	0	2	
	.000,000,90	0	2	
July 26000,000,80	3	0	Solution freshly made up.
	.000,000,85*	1	2	
	.000,000,90	0	2	
December 20000,000,65	3	1	Solution of Sept. 25, 1911
	.000,000,70*	1	2	
	.000,000,75	0	2	
December 20000,000,65	3	0	Freshly made up
	.000,000,70*	0	3	
	.000,000,75	0	2	
December 27000,000,60	2	0	Solution of June 27, 1910.
	.000,000,65	2	2	
	.000,000,70*	0	5	
December 27000,000,60	2	0	Solution of December 20, 1912
	.000,000,65*	1	3	
	.000,000,70	0	3	

The results of over two years show the really remarkable permanency of such a solution.

No systematic study of the heart action was undertaken. However, a few typical tracings showing the action upon the blood pressure and heart of dogs are given. Plate I shows the action of crystalline Kombe strophanthin, and II that of its amorphous acid modification. These are not given with any view to quan-

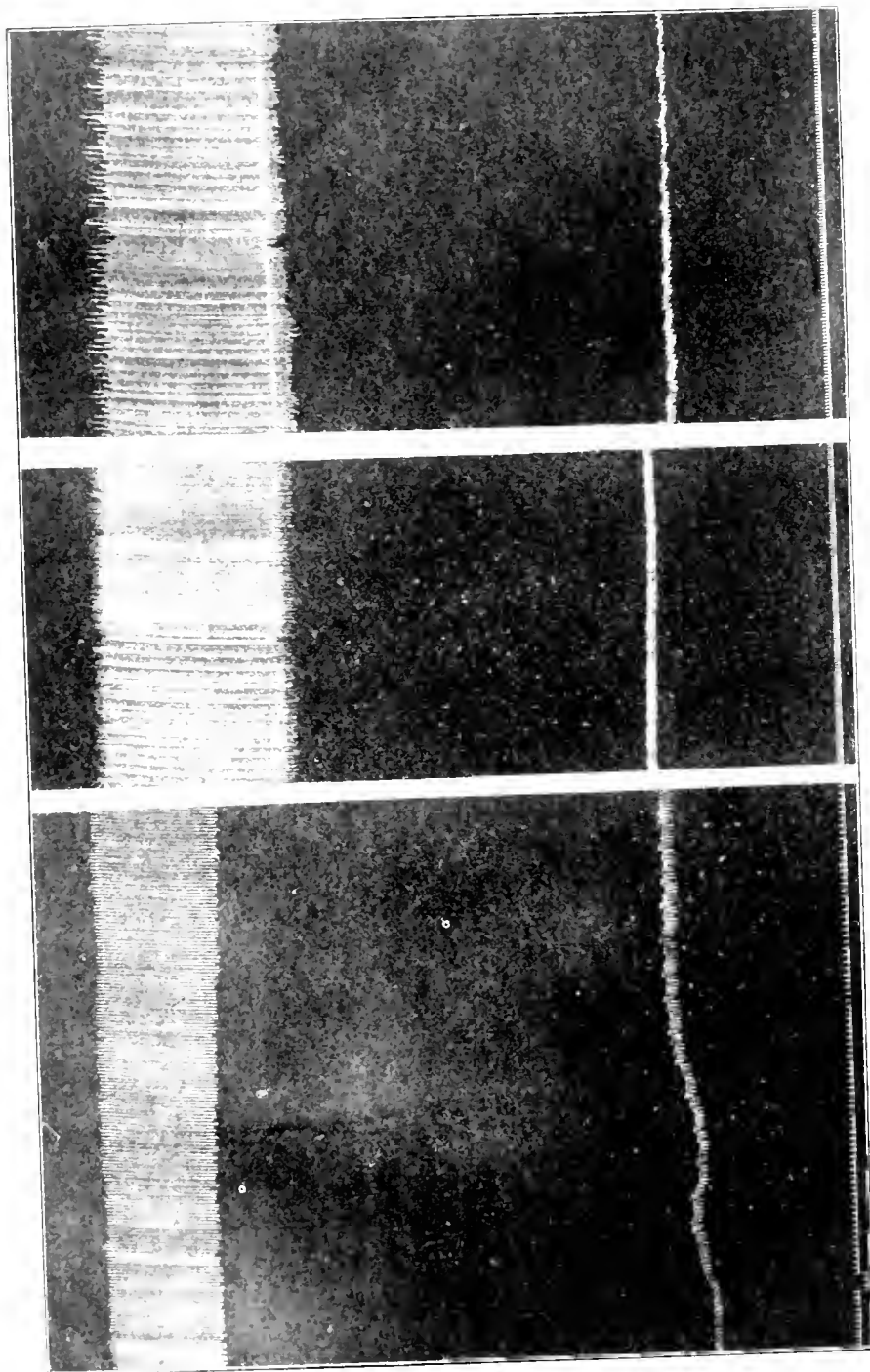


PLATE I.
 Plate I shows the effect of the intravenous injection of 0.3 mg. of crystalline Konbe strophanthin on a 12 Kg. dog under chloroform anesthesia and artificial respiration.
 Upper tracing is the ventricle beat by direct attachment to the apex and median groove of the heart. Down stroke is systole. Base line time in seconds and signal is at the bottom.
 Middle tracing is the carotid blood pressure.
 The second portion of the tracing is one-half hour later, and the third portion is one and one-half hour after the injection.

titative comparison. Blood pressure effects and changes in heart action in warm-blooded animals give but an uncertain basis for comparing heart tonics on account of the long duration of the action, so that a subsequent injection may show a cumulative effect. Thus the response to a given preparation cannot be compared with that of a standard on the same animal, and on different animals the variation is too large for practical comparison.

Tests in connection with the preparation of crystalline Kombe strophanthin showed that strong alcohol precipitated from the tincture of *Srophanthus*, salts

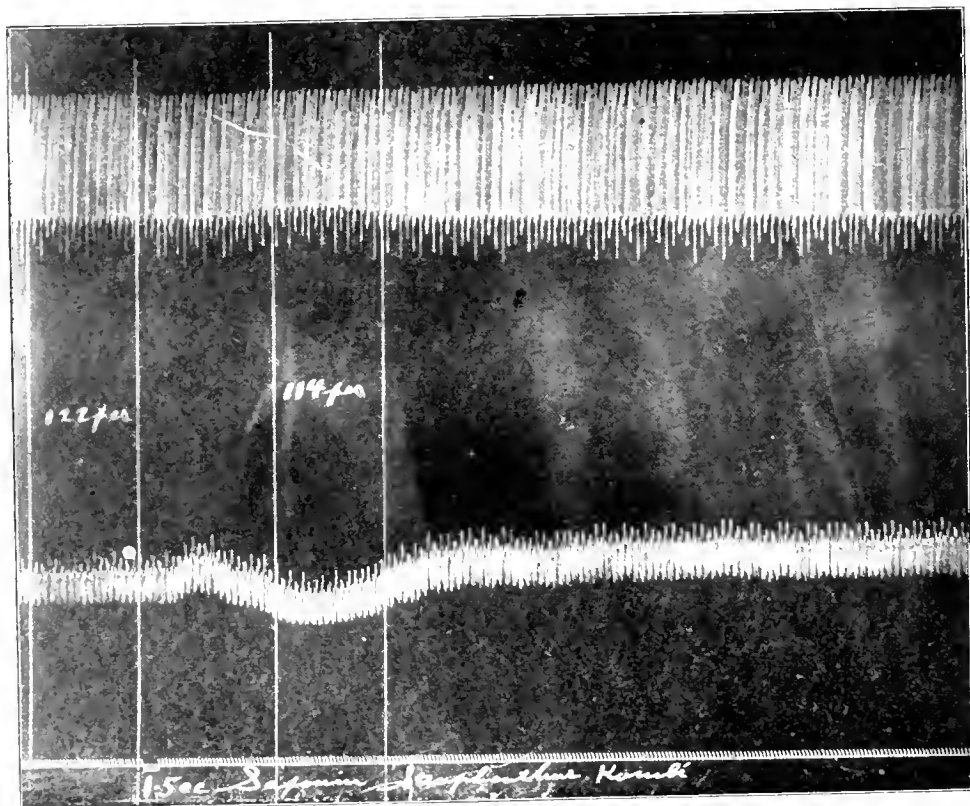


PLATE III.

Plate III shows the effect, on a 13 Kg. dog under chlorotone anesthesia and artificial respiration, of the intravenous injection of 1.5 cc. of a solution (1 cc. of which contains 5 mg. of portion precipitated by strong alcohol from tincture of strophanthus and which shows a toxicity to frogs equivalent to .25 mg. per cc. of crystalline Kombe strophanthin.

Upper tracing is ventricle beat by direct attachment to apex and median groove of the heart. Down stroke is systole.

Middle tracing is the carotid blood pressure.

Base line, time in seconds and signal is at the bottom.

and saponin like bodies which carried down some substances very toxic to frogs and which generally produced a fall in blood pressure and weakened heart action. The dried precipitate killed frogs at .00002 gm. per gm., but in purifying by reprecipitation the toxicity and depressure action becomes less and less. A typical tracing of the effect on dogs is seen in Plate III.

The amount is so small in *Strophanthus* preparations that it is probably of no

therapeutic importance, although in preparations of other drugs³⁹ it may be of importance. Strophanthidin is 1/10 as toxic to frogs as the cryst. Kombe strophanthin from which it is derived, having an M. L. D. of 0.000009 gm. per gm. of frog when the standard killed at .0000009 gm. per gm. of frog.

The intravenous injection of strophanthidin has some difficulties on account of its slight solubility in water, but by quickly diluting a weak alcoholic solution a sufficiently fine suspension was obtained for injection. The effect upon the blood pressure and heart action is very similar to that of strophanthin.

DISCUSSION OF PHYSIOLOGICAL RESULTS.

In the hands of the authors, the 12-hour frog method of Houghton, Am. Journ. Pharmacy, Oct., 1909, gave the most accurate and reliable results, and for reasons previously stated seems the most logical one to use in standardizing the digitalis series of heart tonics. Equally logical is the method suggested (same reference) for giving tangible expression to the degree of activity of preparations of the series, namely, to use the M. L. D. of cryst. Kombe strophanthin as the basis for comparison; the ratio of the M. L. D. of each member of the series to that of strophanthin, thus determining the activity. Ten times this M. L. D. was chosen as the Heart Tonic Unit (see also Am. Journ. Pharmacy, March, 1912); therefore, the activity of any preparation is the reciprocal of ten times its M. L. D. adjusted to the average for that drug, by comparison with the M. L. D. of the standard (strophanthin). Whatever method is employed, however, it is necessary to compare the activity of an unknown preparation with that of a known or standard. This comparison can be expressed only in terms of a definite amount of the standard, and it is the logical procedure to speak of this quantity as a heart tonic unit (H. T. U.) What amount shall be adopted is unimportant. For our own work we have adopted the standard heart tonic unit (H. T. U.) as 0.00001 gm. of crystalline Kombe strophanthin as suggested above. This is ten times the minimum lethal dose for frogs (*Rana Pipiens*, 10 to 30 gm.)

The marked stability of alcoholic solutions of crystalline Kombe strophanthin is a very important point in connection with the use of this crystalline glucoside as a standard for determining the activity of galenical preparations, not only of strophanthus seed, but of other heart tonics.

The comparison of the physiological and chemical properties of crystalline and amorphous acid strophanthins shows that the molecular rearrangement brought about by the introduction of one molecule of water has markedly altered the physiological activity.

Other cases are known in which the addition of a molecule of water is accompanied by marked changes in physiological activity, as inactive ergotinin into active ergotoxin.

In the case of the conversion of crystalline Kombe strophanthin to the amorphous acid strophanthin there has been the change of a lactone group into

³⁹In the case of ergot one of the bodies thrown down with strong alcohol is beta-imidazol-ethylamine (Histamine), which in this case is considered one of its therapeutically active principles.

Digitalis and very many other drugs show the presence of bodies with very similar properties and they become of importance when the therapeutically active bodies have poor solubility in water or weak alcohol, since infusions and such extracts may have quite different properties from those expected of the drug.

its acid and alcoholic portions, and accompanying this change a loss of two-thirds its toxicity to frogs.

The character of the blood pressure changes and heart action does not appear to be altered by the opening of one lacton ring formation, only a loss of activity is observed. It must be remarked that the loss of activity as observed with dogs was not as great as indicated by the toxicity tests on frogs and guinea-pigs, and also the toxicity to rats and mice show that the relation one to three is not true in all respects for the crystalline Kombe strophanthin and the amorphous acid Kombe strophanthin.

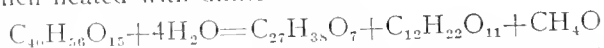
RESUME.

The seeds of *Strophanthus Kombe* Oliv. contain two strophanthins; a crystalline glucosid of the formula $C_{40}H_{56}O_{15} + 3H_2O$ and a closely related amorphous strophanthin of apparently twice the molecular weight. By the action of water on crystalline Kombe Strophanthin there is formed a monobasic acid strophanthin or a mixture e. g. of a monobasic acid, a dibasic acid and the original crystalline strophanthin. These three strophanthins, crystalline, its acid derivative and amorphous Kombe Strophanthin, when split by dilute acids give strophanthidin of the formula $C_{27}H_{38}O_7 + H_2O$. This strophanthidin is identical with the strophanthidin, described by Feist and by Heffter and Sachs.

Crystalline Kombe strophanthin contains neither a pentose nor a methyl pentose (rhamnose). Amorphous Kombe strophanthin apparently contains a pentose. The crystalline Kombe strophanthin prepared by Arnaud is doubtless identical with that prepared by us, but Arnaud was at fault in considering as a hydrate, a new chemical derivative, which we have spoken of as amorphous acid strophanthin.

The results of Kohn and Kulisch show a marked conformity with those of Arnaud and of our own upon amorphous acid strophanthin in everything except the data upon strophanthidin. It seems probable that the method of cleavage and purification accounts for the different strophanthidin.

Crystalline Kombe strophanthin apparently undergoes the following cleavage when heated with dilute acids:



Crys. K. strophanthin. strophanthidin disaccharide methyl-alcohol.

Notwithstanding the uncertainty as to the purity of amorphous substances we have shown that a strophanthin different from crystalline Kombe strophanthin is present in identified Kombe seed. Heffter and Sachs have shown that identified hispidus seeds do not contain a crystalline strophanthin, but an amorphous one which is identical or closely related to the amorphous strophanthin from Kombe.

Both crystalline Kombe strophanthin and amorphous acid strophanthin show the typical heart tonic response, diminished rate and increased amplitude of the heart beat, accompanied by a small rise in blood pressure.

The activity of the amorphous acid strophanthin is less than that of the crystalline strophanthin. By the frog method of Houghton, the activity of these strophanthins is in the ratio one to three.

It is very interesting to note that this loss of activity is associated with the loss of one lacton group.

We believe this crystalline Kombe-strophanthin as the definite active constituent contained in *Strophanthus Kombe* Seed, U. S. P., should be adopted as the standard by which the value of the various preparations of the drug should be measured.

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DRUG PLANT CULTURE IN THE UNITED STATES.*

Within recent years considerable public interest has been manifest in the possible commercial growing of medicinal plants within the boundaries of the United States. This public interest usually expresses itself in the form of inquiries, verbal and in writing, directed to the U. S. Department of Agriculture, State Experiment Stations, Colleges of Agriculture, and to teachers of pharmacognosy in Colleges of Pharmacy, as to how to grow medicinal plants profitably. The more

*Reprinted from the *Pacific Pharmacist*.

purely experimental efforts intended to determine how to grow certain medicinal plants may be arranged under the following heads:

1. Test plantings by the Drug Plant Division of the Bureau of Plant Industry of the U. S. Department of Agriculture, under the direction of Dr. Rodney H. True.
2. Demonstration Gardens of medicinal plants associated with a few of the American Colleges of Pharmacy.
3. Experimental work by a few American pharmacognosists.
4. Exhibition plantings by a few of the wholesale drug houses.
5. Incidental tests carried on in general botanical gardens and in parks.
6. Commercial demonstrations.

With a few exceptions, these several efforts may be summarized as rather trivial and inconsequential in results. The chief reason why not more has been accomplished is a lack of funds to carry out to a satisfactory conclusion the several problems involved. It is true, a number of individuals, realizing possibilities and not willing to wait for scientific proof or demonstration, proceeding on their own initiative, and after many trials, reverses, financial losses, etc., succeeded in establishing the enterprise. Thus we have successful mint farms in New York, in Michigan, in Indiana and in other States; insect flower culture in California; crocus culture in Pennsylvania; lavender culture in California, to say nothing of the extensive culture of garden herbs having medicinal properties. The Division of Drugs of the U. S. Bureau of Plant Industry, under the able management of Dr. True, has done some very efficient work, but a wider range of activity is made impossible through a lack of funds. Experimental work in drug plant culture very properly falls to the U. S. Department of Agriculture and this Department should be granted the funds necessary to carry on such work.

Not only does the United States not furnish funds to carry on commercial experiments, but she furthermore places vegetable drugs on the free list, thus compelling the American citizen who has the enthusiasm and the courage to try out the commercial growing of one or two drug plants, to compete with the foreign market of often a very inferior and even highly adulterated article. We need only mention the Buhach (pyrethrum insect powder) enterprise of California which is compelled to compete with the foreign imports of insect powder made from pyrethrum stems. It is self-evident that under such conditions enthusiasm must soon wane.

It is manifestly unreasonable to expect an individual, or even a large corporation, to invest many thousands of dollars in purely experimental work, the successful outcome of which means a marked gain to the United States, when the United States offers no financial aid or other encouragement. To give another concrete example. At a cost of about \$20,000.00 and six years of effort, it has been demonstrated that belladonna of superior quality can be grown successfully in California. The only encouragement and recompense for this sacrifice of money, time and labor, is the permission to compete with the free foreign market of inferior and frequently highly adulterated belladonna. It is furthermore likely that the entire enterprise will have to be abandoned, because of lack of private funds to undertake the growing of belladonna on a scale sufficiently extensive to net any gain whatsoever under the conditions named. A patch of five acres of belladonna is operated at a loss, whereas a patch of 100 to 200 acres could be operated at slight profit.

Manifestly the proper thing for Congress to do would be to fix a tariff of 40 to 60 percent ad valorem on such drugs as could be grown profitably in the United States, with the help that such a tariff would give. It would be a very simple matter to compile a list of drug plants which would come in such a class. It would be foolish to place a tariff on drugs which could not be produced in the United States, nor should a tariff be placed on such drugs which require no protection for successful competition with foreign markets.

It would manifestly be objectionable to place an important tariff on an article of which the adequate home production is in any way doubtful. For example, to fix a tariff of 50 percent ad valorem on belladonna would compel importers to pay out at least \$15,000.00 annually for the sake of encouraging the culture of a few acres of belladonna. It is true the protection afforded would, in the course of from five to ten years, result in a yield sufficiently large to supply most of the American market, which amounts to about 150 tons of roots and leaves annually. The revenue increment resulting from such tariff would no doubt be welcomed by the United States, but the payment of the duty would certainly be objected to by the importer and also by the retailer and the consumer. From the standpoint of the importer and consumer the better plan would be for the United States to fix a bounty, let us say of 50 percent ad valorem, or of 5c per pound, on certain home-grown and home-marketed drug plants. Until the article is produced on a large scale, the cost to the Government would be comparatively slight. As soon as the home production reached large proportions, let us say 50 percent of the entire home demand, the bounty could be discontinued and the import duty substituted, and thus in a very short time the Government would be more than recompensed for the financial outlay in bounties for encouraging the enterprise. This method would overcome the hardships to importer and consumer and would, in time, be a source of revenue to the Government while developing a new and most desirable home industry.

In conclusion we give a list of drugs upon which a U. S. Government bounty or an import duty of 50 percent ad valorem should be fixed in order to encourage home production. The bounty should be paid for five years or longer as may be necessary as above suggested.

1. Aconite.
2. Belladonna.
3. Foxglove.
4. Henbane.
5. Licorice.
6. Marjoram.
7. Scopolia.
8. Stramonium.
9. Valerian.

These drugs are very important therapeutically and a supply of good quality can be grown in the United States provided some inducement is offered. Marjoram is essentially a spice and the chief reason we have added it to the list is because practically no pure marjoram can be found in the American market.

The matter above outlined is of great importance and should be taken up by Congress at once. The United States pays out some \$18,000,000 annually for drugs which should be grown at home.

IS CASTILE SOAP SYNONYMOUS WITH SAPO U. S. P.?^{*}

AZOR THURSTON, GRAND RAPIDS, OHIO.

This appears to be a very simple question to answer but upon investigation there seem to be conflicting statements in reference to the subject.

I had, recently, occasion to analyze eight samples of castile soap as sold on the market and the results and methods of analysis have been published in Merck's Report¹, therefore, the analytical discussion will be omitted in this paper. I would state, however, I found only one sample fulfilling the U. S. P. requirements.

I have been interested in having this question settled fairly for both the dealer and manufacturer, as there is likely to be a ruling, for Ohio, in the near future as to the standard for castile soap.

I shall briefly review statements that have been made by writers in journals, also statements found in text books and works of reference, after which I shall give the opinions of a number of soap makers so as to compare the scientific with the practical.

In the January issue of the O. V. D. A. Review, Editor Brittain states: "Castile Soap is a synonym for Sapo or Soap in the nineteenth edition of the U. S. Dispensary. It is the soap of the Pharmacopoeia. There are sold in this market many brands of soap (in long bars or otherwise) purporting to be Castile Soap. A large number of them are mere mongrels, containing animal fats, cocoanut oil, soap bark solution and other ingredients not specified in the U. S. P. formula, which gives the ingredients as Olive Oil and Sodium Hydroxide. Persistence in attempting to meet unfair competition by displaying these brands under signs of Floating Castile Soap, Family Castile Soap, etc., is not at all in keeping with the code of ethics which governs the practice of pharmacy."

Joseph L. Mayer, in a paper² read before the Kings County Pharmaceutical Society, states: "Castile soap is official and the authorities recognize the Pharmacopoeia as a standard; therefore, care should be exercised in both buying and selling an article which is true to name and is an olive oil soap."

The U. S. P., second edition, published at Boston in 1828, refers to Castile Soap as it is used in making Soap Cerate, but no mention is made of a standard for Castile Soap. In the U. S. P., 1860, published in 1863, we find "Sapo. Soap. Soap made with soda and olive oil." The 1880 edition of the U. S. P. contains practically the same statement. In the U. S. P., 1890, we find the same statement with the addition in brackets the words "White Castile Soap." This is the first official intimation that Sapo and Castile Soap were to be considered synonymous. In the U. S. P., 1900, or U. S. P. VIII, we find the same definition as in former editions, but the words "White Castile Soap" are omitted, however, as the same ingredients are used in its preparation we should, according to the U. S. P., at least, from inference, consider Sapo and Castile Soap synonymous.

^{*} Read before the Ohio State Pharmaceutical Association, June 19, 1913.

¹ Merck's Report, April, 1913, issue.

² Published in American Druggist, Vol. 51, page 29.

Roscoe and Schorlemmer³ state under the heading Olive Oil Soap: "This kind of soap, which is usually termed Marseilles Soap or Venetian Soap, was first made from olive oil and soda. Now, however, various other oils are employed."

Bloxam⁴ states: "Castile Soap is made from olive oil, which contains oleine and a solid fat known as margarine. The latter appears to be really composed of palmitine and stearine, so that the Castile Soap is a mixture of oleate, palmitate and stearate of sodium."

Cristiani⁵ states: "White Castile Soap is now made in almost all countries, and generally with artificial sodas, and even in Marseilles these sodas are now being used. Yet in some factories the barilla is still used as the base; this alkali, containing a certain percentage of potash, gives a plastic consistency to the soap which has added to its popularity. This effect is now usually produced by the addition of a drying oil, such as hempseed, sesame, ground-nut, poppy or cotton-seed oil to the amount of 15 to 25 percent of the olive oil. These oils, instead of being a sophistication, may be considered a benefit, as they prevent the soap, which if made with olive oil alone, becomes too hard on drying, from having that undesirable property."

I sent a communication to fourteen manufacturers of soap requesting their opinion on what they considered pure Castile Soap, and received a reply from ten, one of which did not manufacture Castile Soap and stated they were not authorities on that brand of soap. Following are abstracts from the replies of the other nine:

1. We are pleased to answer your inquiry of the 31st ult., and to advise you that by Castile Soap we mean a soap made wholly from olive oil and saponified with caustic soda.

2. Replying to your inquiry, we would say that it is a physical impossibility to make a hard, salable soap from pure olive oil and sodium hydroxide. This composition would not even make it a sufficiently hard soap that it could be cut into bars.

In this connection, we would say that several years ago, a party came to us and wanted to get a pure olive oil soap for a special purpose and although we explained to him that this could not be done, he insisted that we should try it, no matter what the cost would be. We had in mind that possibly by making a milled soap, this could be accomplished. Milled soap, as you probably know, is made by a process whereby the finished soap is cut in chips; then moisture dried out until the soap contains about 10 percent; then by milling and plodding, it is again made into a compact mass. But even with this small amount of moisture, the soap was too soft to be merchantable and we had to use harder fats in connection with olive oil (in this instance tallow) to make it a salable soap, of which fact we informed him.

While in the index of the United States Pharmacopoeia, white castile soap is indicated as being synonymous with *sapo*, yet all castile soaps, whether they are imported or domestic, contain some other hard fats besides olive oil, usually

³ Roscoe & Schorlemmer Chemistry, Vol. III, part 1, page 692.

⁴ Bloxam's Chemistry, page 578.

⁵ Cristiani Technology of Soap, page 274.

one-half olive oil and one half other vegetable oil, such as cocoanut oil or palm kernel oil, and we would not consider them as adulterated.

As to the alkali used, the sodium hydroxide is the only one practicable alkali that could be used, as the potassium hydroxide, the only other alkali that could be used, would produce a liquid or semi-liquid soap.

3. The word "Castile" has been applied more to the method of making soap than the ingredients, in the commercial world in the United States, and this existed many years before our entry into the soap business. A Castile soap is supposed to come from Castile, Spain, which was a soap made with olive oil and soda, but the name "Castile," in U. S. A., has been applied for many years to soaps made from other oils, becoming a very common name on soaps. For instance, there is made the Cocoa Castile, which is made entirely from pure cocoanut oil. It contains no olive oil whatever, but could not be considered an adulterant, as it is a more costly oil than the olive oil used in the manufacture of soaps. There is likely more Cocoa Castile Soap sold today than olive oil. It is customary now when getting out an olive oil Castile to make it "Olive Castile," or "Made from pure olive oil."

Scientifically speaking, a Castile soap should be made from pure olive oil, but its uses in the United States have been long connected with other soaps, and very often very cheap grades of soaps to deceive the public.

4. Replying to your letter of the 31st ult., would say that, in our opinion, a genuine Castile soap is a soap made only from pure olive oil and sodium hydroxide.

5. If a Castile soap is marked Sapo U. S. P., we would then consider it synonymous. Otherwise not. The addition of other oils is not an adulteration, due to the fact that they give better lathering quality, although the soap will not be as soft. Of course, if any soap manufacturer adds such things as starch, mineral oils and so on, we would consider them distinctly adulterations.

Nearly all of the Castile soaps made in this country are not made simply out of olive oil and sodium hydroxide, but are made out of a large proportion of tallow, and the word Castile means to the soap trade, as far as we can understand it, simply that there is olive oil in the soap.

6. The writer has always been under the impression that Castile was simply a name, originating from the Spanish word, Castile, or Castilia, an old province in Spain, where it was first discovered that soap could be made from vegetable oils; olive oil being the only material in that country in ancient times.

It has only been a matter of recent years that cocoanut oil has been generally used in soaps, and taking into comparison the cost price of both materials, we hardly see where the argument can be substantiated that cocoanut oil soap with Castile as part of its name is an adulteration.

7. We do consider Castile soap synonymous with Sapo of the United States Pharmacopoeia only when it is stamped pure olive oil castile. There are a number of soaps made under the castile process on the market and are manufactured from a combination of vegetable oils, and some contain small quantities of tallow. These are also considered pure castile, but not pure olive oil castile. We might mention that there are a large number of soaps on the market called Cocoanut Castile, which are also pure.

8. The Castile soap ordinarily found in the trade is not Castile soap according to the United States Pharmacopoeia. Castile soap, of course, derived its name from the fact that it was made from olive oil in Castalia Province, Spain, and later was specified by U. S. P. as a soap made from pure olive oil and sodium hydroxide. The term "Castile" has now come to apply to almost any soap that has a high percentage of cocoanut or olive oil, and that is intended for toilet purposes.

9. Castile soap was originally undoubtedly made by boiling and graining a soap from olive oil and natural alkali, i. e., a mixture of sodium and potassium hydroxides, containing as impurities salts of iron and manganese to which latter was due the mottled or marbled appearance which was characteristic of Castile soap made in the old days.

Today we would consider as genuine Castile, a boiled and grained soap made from olive oil straight or mixed with peanut oil, or sesame oil, or both, using with the sodium hydroxide enough potassium hydroxide to give the degree of translucency and plasticity which a soap of this class should possess, and if a marbled or mottled article was desired, we would have to use with the present day alkalies the chemicals necessary to produce such effect.

Castile soap should be practically neutral, that is, it should contain but traces of free alkali in the form of either caustic or carbonate of soda, and quite free from other soluble or insoluble inert matter of any kind, the sodium chloride content should be only such as is incidental to the boiling and graining process cited above.

In respect to the United States Pharmacopoeia data under the heading "Sapo" advise that in our opinion such providing for a limit of either 4 percent free carbonate of soda or 3 percent carbonate or soda and 1 percent silica or other foreign matter, we would certainly not as soapmakers consider as pure a product containing such an amount of matter other than soap and water.

In conclusion, I wish to state that after duly weighing all the evidence, it is perfectly proper to decide that Castile Soap is properly a synonym for Sapo U. S. P., and that a ruling to that effect is desirable.

ANALYSING MEDICINES.*

DR. J. J. DOBBIE, F.R.S.

The detection of any substance by chemical analysis depends, ultimately, upon obtaining it or some of its combinations or derivatives in a condition recognizable by some characteristic property: for example, form, color, smell, taste, melting-point, boiling-point, solubility, miscibility, or alteration in color or other characteristic when brought in contact with chemical reagents. The detection of the presence of a substance depends ultimately on the senses of sight, smell, taste, and touch.

*Abstract of a statement made before the Select Parliamentary Committee on Patent Medicines, by Dr. J. J. Dobbie, F. R. S., Principal of the Government Laboratories. Reprinted from the *Chemist and Druggist*, London.

There is no essential difference in principle between the method of detecting a substance by ordinary analysis and those of the expert who judges chiefly by smell and taste. The expert might, of course, claim to have special experience in dealing with particular products, and that in some cases might be useful.

Some times a single observation or reaction is decisive, as, for example, in the case of the yellow color imparted by sodium and its compounds to the flame of a Bunsen burner or spirit lamp. In other cases a combination or association of more than one property might be necessary for the proof. Two bodies, for example, might have nearly the same melting-points, such as acetanilid, 113° C., and antipyrine, 114° C., or might produce a similar color when treated with the same reagents. In such cases, for instance, one other reaction is necessary to distinguish between the two bodies.

Inorganic Substances. With inorganic substances it is generally easy to obtain a combination of reactions, and the reactions themselves are often sharp and decisive, whereas in the case of many organic bodies it is in practice more difficult to obtain conclusive single tests of a sufficient quantity for corroborative reaction. For example, the quantity of essential oil obtained in the ordinary analysis of medicines is often so small that it is impracticable to determine its physical and chemical constants, such as specific gravity, boiling point, polarization, and so on, and the odor alone has often to be relied upon.

Where it is a question of a single drug, either as a solid or in solution, there will be usually no great difficulty in identifying the drug, provided that it is one of the official drugs or one whose properties have been described in the ordinary chemical or pharmacological literature. For example, no difficulty would arise with regard to inorganic substances, such as salts of bismuth, mercury, zinc, bromides, iodides, alkalies, acids, and so on.

Organic Substances. Organic substances of definite composition, either prepared synthetically or extracted from plants, such as acetanilid, salicylic and other acids, and alkaloids; plants or parts of plants, whole or powdered, such as roots, barks, seeds, leaves, and flowers, as, for example, belladonna-leaves, chamomile-flowers, fenugreek-seeds, cascara-bark, and liquorice root offer no special difficulties. Taking the whole range of medicinal substances, in respect to the great majority, there would be no special difficulty in identifying the drug in question with certainty, when the analyst is dealing with single articles the properties of which have been adequately studied and described.

Vegetable Extracts. When, however, the drug is a new one, or one which has no known characteristic chemical or physical property, its definite recognition may be difficult or impossible. To the latter group belong extracts obtained by maceration of the plant with alcohol or other solvent. The extract might only contain substances which are common to several plants, and nothing which is characteristic of any one, and it would then be impossible to identify positively by chemical means. When it is a question of a mixture of drugs, the analysis becomes more complicated. In many cases the constituents of a mixture can be detected directly and readily where they have characteristic properties. But in

other cases it might be necessary to separate certain constituents from others which would interfere with the recognition of those characteristic properties. The more complex the mixture is the more difficult as a whole would be the separation. Also, the difficulty is increased when one or more of the constituents are present in very small quantities relatively to the others—or, again, when a large proportion of vegetable extract is present which is without definite features. Further, in the case of vegetable substances, the difficulty is greater than with mineral bodies on account, first, of the fact that many substances which are really distinct chemical individuals resemble one another so closely in properties as to make their discrimination a matter of difficulty; and, second, of the greater susceptibility to change under the influence of the reagents used—heat, alkalies, and so on.

Speaking generally, it is quite practicable for chemical analysis, supplemented, of course, by the microscope and the senses of smell and taste where necessary, to deal with most of the mixtures of drugs which are prescribed in ordinary medicines. But when a number of drugs are mixed together the difficulty of analysis increases with the complexity of the mixture, and in certain cases the difficulties eventually become so great that the complete analysis of the mixture becomes impracticable. Even in such cases, however, bodies with certain well-marked chemical or physical characters, and these are possessed by most medicines, can be separated from the mixture and identified. For example, all inorganic bodies can be separated from organic constituents, volatile organic substances from those which are non-volatile, alkaloids from non-alkaloids, resins from non-resins.

When the medicine consists of a mixture of several vegetable extracts which have not so far been found to have any well-defined chemical characteristics, and which are present only in small proportion, analysis may fail to show what the original extracts are; that is, from what plants the original extracts were derived. It would show the presence of sugars, tannins, acids, coloring matters, and so on; but as these might be derived from any one of a number of plants, they do not indicate the precise extracts used, and analysis must perforce remain satisfied with ascertaining the general characters of the mixture.

The degree of accuracy of quantitative determinations depends very much upon the substance which is being dealt with, as well as upon the nature of the other bodies with which it may be mixed. Broadly, it may be said that the proportion of mineral drugs can be determined with no substantial error. For example, calomel, bismuth nitrate, Epsom salt, and zinc oxide are capable of being quite accurately estimated. Organic bodies, however, present a much wider range of variation; while some can be determined accurately, approximations only are possible in other substances. For example, the proportion of a bitter extract, such as gentian, in a mixture can often be determined only by a comparison with other mixtures made up with different proportions of gentian to match the taste of the first mixture. This may give but a rough approximation to the actual quantity of gentian extract; or, again, the proportion of an organic drug might be sometimes arrived at by determining the amount of one of its components—for example, the amount of alkaloid; but the natural varia-

tion in the amount of the component itself may render the determination of the drug only an approximate one.

So far as a general opinion can be given, it would be safe to say that where the presence of an active organic drug in a mixture had been definitely ascertained, in the majority of cases the analyst can, by one means or another, obtain a fair idea of its proportions, although sometimes he must be content with a rough approximation only.

THE DRUG MARKET.*

HARRY B. FRENCH, PHILADELPHIA.

Benzoic Acid. The first Democratic Tariff Bill proposed a duty on benzoic acid and the reduction of the duty on benzoate of sodium and the measure, as will be recollected, passed the House. If it had become a law, it would have had the result of taxing American manufacturers about 1c per lb. for the privilege of making benzoate of sodium. In other words, if both articles had been admitted free of duty, the American manufacturers would have been better off to the extent of 1c per lb. on benzoate of sodium than they would be under the proposed legislation. While this has been changed in the bill at present before Congress, it shows how injurious may be the mistakes that arise from ignorance or lack of due consideration.

Borax. The present duty on borax is 2c per lb. Under the proposed law the duty will be reduced to $\frac{1}{8}$ c per lb. In the face of this borax has been advanced in price. There are those who think that the effect of the removal or the reduction of duties from many articles will not only not reduce the price to American consumers, but may advance the price, because of a world-understanding.

Citric Acid and Oil of Lemon. Citric acid and oil of lemon have been extraordinarily high for the last few months. Oil of lemon is now selling at higher prices than ruled immediately after the earthquake at Messina. Citric acid has been selling in this country at a lower price than in England, although there is a duty of 7c per lb. Therefore, the present price is firmly maintained, notwithstanding the fact that in the new tariff bill the duty will be reduced to 5c per lb.

Opium. It has been thought generally throughout the country that opium and its products would be largely advanced in price, because of the proposed increase of duty. The present duty on crude opium is \$1.50 per lb. The proposed duty is \$3.00 per lb. The present duty on morphine is \$1.50 per oz.; the proposed duty is \$3.00 per oz. The present duty on codeine is \$1.50 per oz.; the proposed duty is \$3.00 per oz. The present duty on powdered, granulated, or dried opium is \$2.00 per lb.; the proposed duty is \$4.00 per lb.

Under ordinary circumstances, there is no doubt that this expectation would come true. It must be remembered, however, that during the last two or three years, Smyrna opium has sold at exceptionally high prices. The prospects for

*Abstract from report of Committee on Trade Interests, R. H. Lachey, Chairman. Presented to Pennsylvania Pharmaceutical Association, June, 1913.

the present crop to be gathered in this summer are, at this time, exceptionally good, and it looks to us as if the price of opium in Smyrna would decline, at least as much as the advance in the duty. It is probable that very little additional opium will be bought in Smyrna or in London from now on for the reason that it is possible it might not arrive here in time to be entered at the present rate of duty. Therefore, under these circumstances, there might be no opium purchased for importation into this country for a couple of months. This might have some influence in advancing the price here and depressing the price in Smyrna.

Furthermore, the dealers in Smyrna will probably be able to obtain advances from the banks, owing to the close of the war, and will undoubtedly be reluctant sellers at low prices, as they will bear in mind the high prices obtained for several years past, which may postpone a decline at that port.

Our opinion is that opium and its products will not decline because of the proposed increase in the duties, but that much higher prices should not be expected, except the new crop be injured in some way.

Menthol. Menthol at this time occupies rather an anomalous position. The present duty is 25 percent, which, on the prices paid by most dealers, makes the cost about \$8.00 per lb. The proposed duty is 50c per lb. net. At the same time, the price in Japan has declined and is still further declining, owing to the large amount produced during this year and the prospect of a large new crop. The consequence is that dealers are selling stock on hand for from \$1.00 to \$1.50 less than cost. If the new tariff bill should not go into effect until September, we might see some high prices before that time, as spot stocks might become exhausted.

Asafetida. Asafetida has very largely declined in price during the past year. In fact, the cost has been decreased nearly one-half. The high-priced gum that has been sent into this market is soft and many buyers have objected to it on that account. The solubility test is very high, in some cases going up as high as 75 percent. The Government, however, has claimed that this solubility test is due to adulteration; that other gums are added to the asafetida in order to raise the percentage of solubility. In addition to the solubility and ash test, the Government has recently adopted a new standard, known as the "lead number," requiring the gum to show approximately a "lead number of 200," claiming this to be conclusive evidence of the absence of adulterations, such as galbanum and ammoniac. These two gums when added increase the solubility, but lower the lead number. The lead number test, however, is considered unreliable by a number of eminent chemists in England and America. (See "The Lead Number of Asafetida," *Chemist & Druggist*, May 24, 1913, p. 22.)

The whole matter is still in doubt. It is possible that the Government is right in its contention, but it is very questionable. In the meantime, importers experience great difficulty in importing this article.

During the warm months, there is also great trouble in obtaining powdered asafetida. There is no test for powdered asafetida in the Pharmacopœia (V111), and the test required for the whole gum is arbitrarily applied to the powdered, and that powdered which answers the test for the whole gum is called "U. S. P.:" The requirements of the whole gum are that it shall test not less than 50 percent solubility and contain not over 15 percent of ash. We believe that in the next

issue of the Pharmacopoeia the ash content for the powdered gum will be made greater, as in powdering the gum the ash content is necessarily increased. The powdering of this gum is very difficult and we have been practically forced to powder it with magnesium carbonate. We had several thousand pounds powdered without magnesium carbonate, but in warm weather such a powder becomes lumpy and viscous, and we have had to have a large portion of it powdered over with magnesium carbonate. By great care, we have obtained a quantity of this re-powdered product that answered the requirements of the Pharmacopoeia for the whole gum. When powdered without magnesium carbonate the test ran up as high as 65 per cent solubility and only contained 10 to 13 percent of ash. When, however, it was re-powdered with magnesium carbonate, it tested only about 52 percent solubility and nearly 15 percent ash. In many cases it contained nearly 25 percent of ash. As a matter of fact, the ash content is of no importance, so long as the solubility test is of the proper standard.

Papain. Papain is now largely used in manufacturing tablets and is another interesting article. We imported a considerable quantity of papain and on examination found that it contained about 45 percent of starch. As there should be very little starch in precipitated papain, the starch was manifestly added as an adulterant. At the same time, we have not been able to find any papain that was not adulterated with starch, and we, therefore, sell this papain with the starch content marked on the label and also state the fact in our quotations. It is possible now that we have published the fact of this adulteration, that dealers abroad may conclude that they can get a proportionately higher price for pure papain, and will gradually, if not immediately, discontinue this injurious practice.

Copaiba. Uncleaned copaiba of the true South American variety, as sold in this country by the receivers in large drums, based upon LaPinnes' test, has been constantly advancing during the last few months. The new tariff proposes a duty of 10 percent ad valorem. The market value by the can of the genuine article is 55c per lb. The Hamburg variety can be still bought at 45c per lb. The attention of the Government has been called to this Hamburg variety, but they either have not given the matter attention, or have been unable to prevent the importation, for the reason that the product answers the requirements of the U. S. P.

Balsam of Fir. Canada balsam, which is official, has been unobtainable for some months of this year and has sold as high as \$14 per gallon. There is a variety of Oregon balsam obtainable, that is apparently equal and similar in appearance to Canada balsam, and cannot be told apart from it without testing. A great many people have thought that Oregon balsam was an artificial product, but this is not the case. It dries more slowly than Canada balsam and does not respond to the magnesium oxide test. It is to be hoped that in the new Pharmacopoeia it will be found advisable to make Oregon balsam of fir official. In the meantime, doubtless, many people are paying the price of Canada balsam and are receiving the Oregon product.

Balsam Peru. The Government seems to have been successful in refusing

admittance into this country of Hamburg balsam Peru and possibly, in a short time, only the genuine article imported from San Salvador will be obtainable.

Hyoscyamus Leaves. Whenever a crude drug is imported that tests less than required by the Pharmacopoeia, the Government can make such conditions as they desire. They may refuse admittance of the drug or they may permit its entry and use on such conditions as they think would protect the public. Henbane leaves is a startling example. The Pharmacopoeial requirement is 0.08% mydriatic alkaloids. This is higher than can be commercially procured, at least so far as our experience goes. We have obtained samples of various offerings of henbane leaves that were quoted as U. S. P. quality and in every case we found that the test was far below the requirement of the Pharmacopoeia. We are not able to import henbane of U. S. P. strength except for manufacturing purposes, since the government has refused to permit us to take delivery excepting we give an affidavit to the effect that we will not resell any of this drug or use it except to parties by whom the product would be standardized. By this ruling, we were prohibited from filling any orders from retail druggists. We do not think the enforcement of this rule is justifiable, for the reason that U. S. P. henbane is not obtainable, but, worse than all, the Government has, in spite of repeated remonstrance, failed to enforce the rule at all the ports. Consequently, we import the henbane leaves for manufacturing purposes, and buy the leaves in New York City for selling to the retail drug trade, and this, notwithstanding that the leaves we import are, as a rule, of better quality than the leaves purchased by us in New York City.

Angostura Tonka Bean. The great consumer of Angostura tonka beans is the tobacco trade. The normal price is about \$1.00 per lb. Last year, owing to short production of several years, the price ran up to over \$6.00 per lb. We are not well informed on this article, but we understand that competition is caused by the respective price of rubber and other articles grown in the same countries. If, for instance, the demand for rubber is very great and the price high, labor is concentrated in producing rubber and the other articles, such as Carthagena and Rio ipecac root and Angostura beans, are advanced in price because of lack of labor. If rubber declines, it is to be presumed that there will be a corresponding reduction in the price of the other articles. The price for the balance of this year will be very much lower, as the beans were offered in quantity at less than \$1.00 a short time ago. Recently, the price has been higher.

Cannabis Indica. The Pharmacopoeia specifies that the female tops of the East India or Bombay cannabis indica be used. A very high tax is levied on every pound of the drug grown in India by the British Government, for the reason that it is used by the natives and is thought to be injurious. The product is being cultivated in America and, while not official, it is being used medicinally. Reliable pharmaceutical houses specify fluidextract made from the American product. There are several other varieties of the drug and large quantities are imported from Madagascar, but our experience would indicate that none of these other varieties has great value. The American product, however, possesses considerable value, and it is possible that it may be recognized as official in the new Pharmacopoeia. In the meantime, of course, no dealer has any right, legally or

morally, to supply a product from *cannabis indica*, except from the Bombay variety, without so specifying on the label.

Ergot. Ergot has ruled very high in price for some time past, owing to the short crop. We have been successful each year in obtaining a reasonable supply for our own manufacturing of the new crop of Spanish ergot, which has been proven by physiological test to be of excellent quality. The early part of the present spring, however, we had occasion to buy a few thousand pounds of Russian ergot. We obtained a well-known brand, thinking that in this way we would secure better quality. The physiological examination, however, showed that this ergot was inert. The writer has been informed that while Russian ergot is smaller than Spanish ergot, there is no intrinsic reason why Russian ergot should not be as active as the Spanish drug, and we cannot explain why these various lots proved to be inert.

Guarana. Guarana is a product of Brazil and is largely used in that country in the form of tea. Years ago, this article has sold as low as 20c to 30c per lb. In recent years, it has averaged a price of from \$1.25 up. The new crop is generally offered about June. Up to this time, the offerings have been very small and the lowest reliable quotation that we have heard was \$3.00 per lb. Unless conditions change, very high prices will prevail.

Barbadoes Aloes. There are many who argue that true Barbadoes aloes is not obtainable, but they are mistaken. There is a moderate quantity imported into this country regularly every year.

SMITH, KLINE & FRENCH Co., June 2, 1913.

CHINESE PHARMACY.

J. F. RUPERT, HOSPITAL STEWARD, U. S. NAVY, ANNAPOLIS, MD.

There may be said to be two classes of drug stores in China, the strictly native shop, and the other invaded by the ideas of foreigners. Indeed, this division marks boundaries in all conditions in China. The strictly native shop would never be suspected of being a drug store by any one not acquainted with such places. However, after a short residence in China, to the interested, it becomes an easy matter to pick out the drug vendors as one passes in a rickshaw.

The native shops sell no liquids. No bottles are in evidence. No sign of the existence of foreigners is visible any place about the premises. Nicely lithographed cans are arranged neatly on the shelves with Chinese labels. Very many drugs are kept in wooden drawers, arranged exactly like the herb drawers of their more enlightened brethren in the States. Powders are kept in cans and jars. Chemicals do not enter very largely into their stock, which consists for the most part of vegetable and animal drugs. Their "back rooms" are well stocked with herbs in bundles, and flowers and seeds in bags.

In China all strictly native business houses open on the street without windows or doors. At night the entire front is closed with boards. This is also the prac-

tice during stormy weather. Curtains of reeds or grass give shade from the fierce sun. The Chinese have many native practitioners, whose business is a mixture of quackery, conjury and empirical experience. Most of the people, especially the poor, essay to cure their own ills, assisted by the advice of friends and the aid of the drug dealer, who is shrewd enough to miss no opportunity to sell a few coppers' worth of some of his cures.

The drug men are very adept in putting up packages. These packages are not secured with a cord unless quite large, when the package will be carried by the cord ends which are left long for this purpose. The small packages are made by placing the article to be wrapped in the center of small square pieces of paper, kept ready for this work, the lower corner is first folded over, then the side corners, and lastly the top corner is folded down and tucked in, making a very neat and secure package.

Their drugs are mostly of an aromatic and demulcent nature, and while they thoroughly understand the practical use of many vegetable drugs, others are used in ignorance and superstition. Active drugs containing powerful principles are not much used, as they are fearful of their effects. Poppy seed, ginger, anise, fennel, orange and lemon peel, marshmallow, elm bark, cinnamon, cloves and other spices, are common drugs to be recognized. Ginseng root is, of course, the standard Chinese remedy, and, because of its price, is used mainly in the treatment of disease in its last stages. The consumptive, about to cash in, will be allowed the great luxury of ginseng if the price is available. Great attention is given to the cultivation of this drug and a product of greatly varying value is found upon the market. I am told the very best comes from Korea, that is, they consider that this is the best.

The Chinese names for drugs vary in the different provinces and have no relation to English equivalent names. This fact makes it hard for Chinese qualified physicians to use native herbs and, of course, the natives usually cannot furnish drugs asked for by foreign educated doctors, for the reason that they have been taught a manufactured vocabulary for names for drugs and medical terms for which the Chinese contains no equivalents.

Chinese pharmacy has its zoological side also. The number of insects and reptiles that can be produced from among the array of cans, jars and drawers is certainly wonderful. Dried toads, snakes, locusts, beetles, centipedes, flies and bugs of all descriptions can be had.

These are often smoked, usually dried, but some have the appearance of having been put up in grease or syrup. These animal products are more expensive than the vegetable drugs, and in their use I would judge that superstition plays a greater part than in the use of the more common medicines.

Pills are in evidence in large quantities and have a ready sale.

The scales used are an unequal-arm, single-beam, hand affair, with sliding weight. These are carried about the place as is most convenient in weighing. The Chinese unit of weight is slightly heavier than our pound—four of their units equal five of our pounds.

As to the prices charged, I can give little information, as they will charge a foreigner all they can, and it is only after having gained their confidence that they will allow one to examine their stocks or give any information. I would

judge that they do a considerable business, as the Chinese like to take medicine, and the shops constantly have customers about. Some have large buildings and large rooms and employ as many as 10 to 15 or more assistants. China is full of disease, and the habit of living in crowded little hovels, with ventilation most carefully guarded against, and a constitutional dread of water, unites to incubate and spread disease wholesale.

In China a great amount of business is done in coppers and cash. A copper is about the size of our half-dollars and is worth less than 1-3 cent gold. A cash is worth about 1-30th of a cent gold. Cash are used by the very poor and will buy comparatively as much as a cent in the States. Coppers are universally trusted as their size and actual value in copper prevents counterfeiting.

The native drug seller has some dignity about him and greatly resents foreigners trying to satisfy their curiosity by prying into his business.

A Chinese pharmacist would pass a poor examination in chemistry, but could show us clubs and spades about vegetable drugs. He must be able to identify all his herbs; must know their uses and properties; must know what time of the year to collect them, and how to cure and preserve his stock, and must understand their cultivation and the different species. The farmers and native collectors raise and gather the plants and they are for the most part ready for sale when put upon the market. The roots are all sliced and have the appearance of having been cut when green and fresh.

The other class of stores, very likely, will have glass windows and a door and glass show cases. These stores are often owned and conducted by educated Chinese physicians, who do a good business, really converting the place into a dispensary, where the people may come, relate their symptoms and receive treatment. These stores, of course, have stocks of foreign appliances and chemicals, and in many respects have the appearance of some of our stores at home. In fact, in Shanghai and other large cities, some Chinese stores employ a number of foreign pharmacists and are really up-to-date, first-class pharmacies.

It is surprising how many Chinese can speak English, even in the heart of the native cities, where foreigners rarely enter, and then only with a guide. Education is honeycombing Chinese superstition and ignorance, and 50 years more will see China a modern country for the greater part.

A number of patent medicine firms from the States, and especially a Japanese company, are flooding China with patents. Many patent medicines bearing not a word of English are seen upon the shelves, while their advertisements are seen in the papers and upon walls and most any place where they will be noticed. Some of them even have advertisements on the front of street cars passing through the Chinese districts in the large cities. In fact, the Chinese are an ideal people to whom to sell drugs.

A medicine well colored and pleasantly flavored is really relished and finds a most ready sale. The consumptive, of whom China has thousands, will buy a bottle of some quack medicine and shut himself up in some hovel and we can hardly wonder that he soon succumbs. Just now, while the Chinese government is doing its utmost to suppress the use of opium, many unscrupulous are pushing opium cures, both liquid and pills, which contain morphine, and are doing a thriving business. The Chinese themselves attempt this patent medicine stuff,

but the greater part of the nefarious business must be laid at the feet of foreigners, mostly Japanese, and some Americans.

In these stores we find soaps, perfumes, some stationery, combs, brushes, cigarette cases, patent medicines, cuttlery, leather goods, and, in fact, a little of everything.

In some stores, not strictly first class, are to be seen powdered drugs and pills in almost any kind of container imaginable. Liquid shoe polish bottles, cigarette tins, beer bottles, whiskey bottles with screw tops, patent medicine bottles, pickle bottles are all pressed into service. Perhaps they place some confidence in the lithographed label.

Many of these drug stores also attempt a little in the line of dentistry. This consists mostly of extractions with modern forceps, silver fillings and gold crown. With the least instruction from some one who has a reputation as a dentist, some of the natives develop into really clever workmen. China has a number of men who are graduates in dentistry from schools in the States and Europe and these do a large business and also conduct schools, often going to neighboring towns for the purpose. The course of instruction is rather short, but the students seem to absorb a great amount of practical knowledge during this time, and are able to do a great amount of good among their country-men who happen to have the necessary cash.

Gold is considered a poison of especial potency. It is often resorted to with suicidal intent, probably because they know its deathly properties are more in reputation than in reality.

Phenol and other caustics are taken by some who really mean business in the serious matter of giving up the ghost. Nitric acid also seems to be favored in this regard.

There are a number of Chinese works on *Materia Medica*. The old writers did considerable work in this line, but many of their works have been lost or cannot now be read.

Ointments are very popular with the Chinese. Pills and tablets are frequent. Blisters and poultices are well understood. A colorless and tasteless preparation is despised and held in contempt. Decoctions and infusions, however, constitute the backbone of Chinese medicine.

COOPERATION, THE LIFE OF TRADES AND PROFESSIONS.*

E. G. EBERLY.

Unquestionably, to come as far as I have in response to your kind invitation, would indicate that I was competent to deliver a message, or at least speak to you interestingly. The topic which has been chosen presents another proposition that would here call for excuses on my part were I given to such methods for getting myself out of trouble, but my way of doing under such circumstances is

* An address delivered to the Nebraska Pharmaceutical Association, June, 1913.

to do the best according to my ability and rely on the considerate judgment of my friends.

"No small profit that man earns—
Who through all he meets can steer him.
Can reject what cannot clear him
Cling to what can truly cheer him."

The subject of my address was selected prior to the misfortune that befell a portion of your state and which gave you an opportunity to show what stuff your citizens are made of. No sooner had the news stirred the sympathies of the good people in other states and enlisted their desire to aid you when the wires conveyed the information that Nebraskans were grateful for the expression of sympathy but perfectly able to take care of the situation themselves. Fortunate on the one hand, but how much satisfaction this must have been to you, and if possible the estimate of others was enhanced because of your strength and fortitude. So this is why I have made the statement that my topic becomes more difficult to handle because of your familiarity with practical co-operation. If the opportunity did not offer for discussion from many viewpoints I would indeed hesitate, and I may, therefore, speak of things that you accept as a matter of course, or you may differ with some of my interpretations. My subject is as comprehensive as it is important, but precludes the possibility of a thorough discussion on account of covering too much territory.

My objective in discussing the first portion of the topic will be an endeavor to point out the contribution of the merchant classes to civilization, and to deduce therefrom arguments which should appeal for their proper encouragement and promotion of regulations for the benefit of the greatest number. I am aware that in order to do this rightly, will require the narration of considerable history which would not be expected in this dissertation, and I will not attempt to do so except perhaps to the extent which will advance one of my purposes, namely, to show that certain means of distribution do not upbuild nor conduce to the greatest general prosperity.

We have as neighbor a sister republic with natural resources relatively not inferior to our own country, and with a history antedating that of ours. Without going into an analysis of the contributory causes, it can readily be asserted, in order to make the example fit our subject, that in the one instance we have exemplified cooperation; in the other, usurpation of power, self-aggrandizement and disregard of the majority predominate. We may make the further declaration that, while out of revolution stability may come, its continuance is a serious impediment to progress.

In all ages the overwhelming majority have been compelled to give their time and energy to the pursuit of material things, needful for subsistence and culture; and when the majority were given fair consideration according to their participation, then there was progress. When, however, the condition of ruler and serf obtains, whether by the force of arms or by money power, when to do unto others according to the best interest of the greatest number is transposed so that a few reap the benefits at the expense or detriment of the many, there is impediment, no matter what conditions may seemingly be.

The development of trades is an interesting study, and the divisions of time from earliest history to the present can readily be recognized as most progressive during which the opportunities for exchange of commodities were most propitious. There were periods when certain special interests gained greater ascendancy because of strife, favoritism, or certain new and favorable conditions, but the most far-reaching benefits come always when the rights of all are recognized.

The need for knowledge, of implements and devices, of means of conveyance and intercourse between nations to further commerce, recognition of the necessity of laws and regulations induced if not compelled merchants to lend their encouragement in such direction and help the promotion of industries and systems of government and learning. As an example, we may utilize the history of the Phoenicians, who for centuries were the schoolmasters of the ancient world; they fought their way towards progress, not by force of arms, but by commercial conquests, establishment of cities, seats of learning and furthering the industries. We may compare with them their successors in power when the merchant made place for the warrior. The Romans were great politically, but never economically; they, or at least the ruling class, lived largely on the labor of others, and compelled tribute from the weaker. It is pleasing to cite our own country, founded upon a pact in which cooperation was a predominating thought, and throughout her remarkable history the same ideal has stimulated development. Possibly there is no country which represents both phases so well as does Germany, where today the life of the individuals, industries and municipalities are systematically directed by studied cooperative measures. So every period up to the present might be scrutinized and in the disclosure those in which cooperation was predominant show to better advantage than the times during which power or privileged classes controlled the affairs of government and society.

That there are numerous examples evidencing greed, extortion and piracy on the part of the merchants is readily admitted. Man is not a finality, he will always be in the making and there always will be improvement if rightly guided under the influences of cooperation.

These tracings have been made to emphasize that permanent progress is not brought about by enslavement nor destruction, but by enlarging the powers of humanity, and through cooperation, build up resources and extend knowledge, and that in such endeavors throughout the years of commerce the merchant classes have been ever foremost.

It must be admitted that large corporations are necessary and have been established in response to popular demand because of economical necessity, but we must remember that economy per se is not and never should be the sole aim of society. Competition is gradually giving way to combination and cooperation and monopoly is being regarded with more and more odium. This, then, is the point I have desired to reach, namely, that everyone should view the encroachment of large central supply houses on the trade of the stores in towns and cities with grave concern and give the matter study and thought. I have seen in the last three years one of these large business houses treble its capacity; what this signifies need not be told more emphatically. Society and government should

seek to encourage the cause of the small dealer rather than aid the development of these large department stores.

No right-minded person will consent to penalize success that results from fair methods nor consent to laws which would have the effect of pensioning and subsidizing industrial weaklings, but that which sustains the life and makes for greatest general progress is to be preferred over individual or corporation interests. There should be no excessive profits for the few unless the many can be decently self-supporting. This should be one of the purposes of cooperative measures, and the country overlooking this will build a nation of a few with all the advantages of wealth and education, and the vast number rightfully dissatisfied with their lot. Such is the history of military governments exalting the leaders and oppressing the vast majority, and excessive money power creates like conditions. The large interests have realized the results and have willingly donated funds as a sacrifice for all kinds of laudable enterprises for educational and charitable purposes. The fault has not been entirely theirs, for unfortunately the trend is to the cities and overcrowding, and the necessity of gaining livelihood encourages the payment of low wages. As a result also, in a good many instances, employes are "round pegs in square holes," and are overpaid, no matter what their compensation. They are in a large measure responsible for their position in life because they fail or are incompetent to exercise that degree of intelligence which helps to success. This is particularly unfortunate in an agricultural country and should direct cooperation to making these pursuits more attractive. The large establishments must be brought to realize that a good citizenship can not come of those who are willing or are compelled to accept charity. By accepting of such service and promoting the activities wherein low wages are essential, they have saddled upon themselves accompanying responsibilities. It is largely up to them to perfect plans for betterment of conditions which are now being subjected to much criticism by the public, who, by the way, are not as mindful of their own contribution to the system as they should be.

Doubtless many of you, and perhaps more particularly those from the smaller cities, have suffered loss of revenue by the detraction of trade through mail order schemes and catalogue houses. In order to impede the extension of these business methods, will require not only the cooperation of business men but of all thoughtful citizens. The National Association of Retail Merchants has education along these lines as one of its purposes, and should receive your encouragement.

Merchants in all towns should work together along well-studied plans for enlightening the citizens and farmers of the respective communities on this important subject. The local newspapers are dependent largely on the successful merchants, and they are in position to assist in this campaign of education. Merchants establish stores for the convenience of the farmers, this contributes gradually to the growth of the community and increased property values; destroy the merchants and the town becomes dead; property values decrease. Cooperation constitutes the mutual method of growth between the farmer and the merchant. Each is dependent on the other; when either one is hurt, immediately the strength and usefulness of the other is weakened. The very foundations of

our present cities were built on the growth of the small store and the town grew with it, and so it should continue to be. Our social system is constructed on these small beginnings of the country town. Some towns may grow on account of certain climatic or resourceful advantages, but in an agricultural country, the country merchant is the most important link between the farmer and what the farmer produces, and the increase in the value of his land comes from the stability and growth of the country town. Convince your farmers that this is their interest as well as yours. Then, the farmer has the advantage of the neighboring town's high school, opportunities given him by the progressive merchants who also pay further taxes that are providing better roads over which the farmer can more economically convey his produce.

So I might continue relevant arguments, many of which also hold good with regard to the diversion of trade from the druggist to the peddler. In this connection another viewpoint may be included, namely, that educational qualifications are exacted of the druggist to conduct his business. The peddler often assumes the position of physician and pharmacist without the least knowledge anent the application or compounding of medicines or the drugs themselves.

Cooperation is the keynote of a square deal for producers and distributors as well as consumers. Cooperation through organization has developed the great industrial enterprises and is necessary for the life of small business. Competition was once necessary, but now its importance and value rest in excellence of service and quality of products. It is the height of folly for business men to cut their own profits because the competitor may perchance be put out of business.

There is one material attribute of cooperation which is not fully appreciated or perhaps understood, and that is, it involves surrender of independence, and this frequently makes cooperation difficult because of the innate selfishness of man. If two people agree to cooperate in regard to any matter it means that each one of them must surrender some measure of his freedom in order to carry out the agreement, for if one made all the concessions, it would be working for only one of the parties. Now, of course, in the transaction of one class or organization with another, they are representative of the individuals. This would apply with arrangements between the clerk and proprietor, or organizations representing the two, or as between retailer, wholesaler and manufacturer. Cooperation invariably implies reciprocity.

The injustice and lack of wisdom that obtains in price-cutting is too well recognized to require elucidation, but for a general example: A manufacturer produces and exploits a meritorious article for which a price bearing a fair profit is fixed. In order to attract trade and link their own name with a good product, the price is cut by a dealer, obliging others to follow suit, and the result is inevitable dissatisfaction. As a further result, the sale of profitless articles under the established conditions is curtailed and displaced by others that are not as well known. The correction of this unfortunate condition has occupied the thoughts of all concerned, and every time a solution of the problem was seemingly effected, if no other interference appeared, then legal construction has spoken adversely. Consider the recent suit against the Kellogg Corn Flake Company, charging conspiracy, restraint of trade, subornation, oppression of the

consumer, and contraventions of the Hepburn law, which makes it a misdemeanor for a railroad to sell transportation at less than a fixed price.

A means will be found for the correction of price-cutting and competition dependent on price-cutting will be done away with. The trouble after all is largely that though cooperation is talked, there is lack of willingness to conform to the essential of cooperation, namely, that all parties concerned must be willing to surrender some measure of their freedom.

The plan recently put into practice, of a conference between associations of drug interests should prove advantageous, but provision should be made to adequately recompense those who give their time to this service. The large number meeting annually in convention can present valuable suggestions and shed light on every viewpoint, but a smaller body having all these different ideas before them for investigation can better systematize effective means of action.

The possibilities will become greater and better results will follow when there is stronger and more direct cooperation between State associations and National bodies. The individuals are occupied with business affairs, but their continued welfare must be looked after, and this should be one of the purposes of associations. In this progressive age with quick changes there has come a demand for such means.

Such need is also discerned in more strictly professional lines. Professor William Ostwald, the German chemical authority, tells in the *Scientific American* about the functions of the recently organized international society with headquarters in Munich, named "The Bridge." This association is intended to form a general clearing house and reference bureau for chemists all over the world. Professor Ostwald refers to the wonderful strides that science has made, and so rapidly, that scientists themselves can no longer keep pace with it, so that such cooperative assistance is necessary. Some central means is needed whereby chemical progress in all its numerous ramifications shall be suitably recorded, digested and made available. Such cooperative pharmaceutical work has been done by the hygienic laboratories of the U. S. Public Health and Marine Hospital Service, which was of great help to the Revision Committee of the United States Pharmacopoeia.

Professor Tschirch, of the University of Berne, has the same thought in mind for international service and suggests the establishment of a laboratory also, so as to extend the field of utility.

These references are made because I believe there is a necessity for similar work which should be undertaken by the American Pharmaceutical Association, and, therefore, strengthened by other reasons that can easily be given, this organization should have a permanent home where pharmaceutical information may be systematically recorded, and investigations serviceable for pharmacists may be made. At the same time, efficient assistance can be rendered in Pharmacopoeial and National Formulary work; and in cooperating with the laboratories of the American Medical Association might be helpful in many other ways.

Whatever cooperative work is done by the American Pharmaceutical Association should be done with a view of promoting the purposes of these profes-

sions and for the good of humanity. The improvement of our materia medica and the correction of deficiencies wherever they are known to exist, the production of better and more efficient means and methods for the prevention and treatment of disease, should be paramount to personalities and selfish interests. It should always be remembered that our knowledge relative to materia medica is not final, that we can not be dogmatic in the rejection or acceptance of medical agents; that judgment thereon must come only after due investigation.

It is impossible for the view of any individual to compass the whole domain of medical science and art. Unfortunately, humanity is selfish, and while higher education should and will modify the trait, there will always persist the desire to gain advantage by one over the other. There is a tendency of some who have acquired distinction to become dictatorial and receive the ideas of others with contempt, or at least without the unbiased judgment that should be given the endeavors of those who have a desire to be helpful and whose opinions may possibly not coincide with theirs. We are sometimes persuaded that ambition, jealousy and hatred are as evident in professional lives as in those engaged otherwise.

The work of pharmacists and physicians is interdependent and requires co-operative action; everyone who sincerely labors for advancement along these lines is entitled to an opportunity. Charlatans, or those who impose on the public and have no other motives than financial gain, should be exposed, and the public should be enlightened concerning products that can not possibly possess any real merit, or perhaps worse, are hurtful if their use is persisted in.

Cooperative work among associations, if properly directed, should have the same relative value as the work of members within an association. The "get-together proposition" is the problem of professions as well as of merchants and mechanics. We are generally agreed that the common interest of an association should be the interest of individual members. So the interests of different associations having certain objects in common can be directed by harmonious cooperation for profit of each association, and thereby every individual concerned is benefited. Further analysis proves that association service serves the individual who lends a helping hand in the promotion of common interests more than if he had directed his activities without concerning himself with the interests of others. It should be the spirit of those engaged in the drug business, whether they are most concerned in commercial or scientific pharmacy, and be the inspiration upon which we shall be lifted step by step to greater, broader and more hopeful things while laboring for our own interests and the welfare of humankind.

The advancement of pharmacy depends largely on those who enter upon this work, and in this selection the pharmacists may be helpful; the pharmacy schools and pharmacy boards, aided by the associations, are striving for higher qualifications, but this is impossible without the hearty cooperation of employers.

May I say here also that the success of a business depends on the concerted action of employer and employes, and that the lack of coordination in stores is not as uncommon as many suspect. The energy and enthusiasm displayed by employes when they are invited to work with the employer or manager for the

good of the business transcends by far the spirit evidenced when they are only directed to work for the head of the house.

Pharmacy must strive for advancement if the public is to receive the proper service; and if the people would exercise the same judgment in the selection of the pharmacist that they do in employing a physician, the chain of cooperation would be strengthened.

So the linkage of cooperation might be traced through every activity, and the progress if not the continuance, is dependent thereon. Successful cooperation requires above all a coherent plan which can be explained to the participants and which will in its working so far conform to the nature of things as to be practical.

Everyone should be given a fair opportunity of sharing in the profits and prosperity of this country; cooperation should be conspicuous in every activity, joining together employer and employed as comrades, not estranged as conspirators, but working together for respective common interests and good, exhibiting loyalty, efficiency and service with a determination to live right and think right.

AN INTERNATIONAL PHARMACOPOEIA.

Scientific progress is now international, and through the medium of the professional press each advance recorded in some foreign country is rendered accessible to all engaged in the same branch of study or research throughout the world. But today it is not the problem of a common tongue, such as Latin in the Middle Ages, which must be solved; the difficulty lies in another direction. Science in all its branches has become so complex that a number of more or less generally recognized standard terms have to be employed, and comprehension of some new discovery or progress, and its intelligent utilization, are based on the uniform value of certain expressions. In medicine and pharmacy uniformity in the strength of preparations answering to identical names is the first postulate for an internationalization of therapeutics, and the first step towards the attainment of this ideal was effected at the 1902 Brussels Conference on the Unification of Pharmacopoeial Formulas of Potent Drugs. Much remains to be done, however, before absolute uniformity as regards the strength and method of assay is attained in the case of several potent drugs with regard to which variations still exist between several Pharmacopoeias. It is at this moment, when the demand for a fresh conference is being heard, that Professor Tschirch comes forward with a communication to the "*Schweizerische Wochenschrift für Chemie und Pharmazie*," drawing attention to the waste of energy which at present takes place by each country conducting its pharmacopoeial research work practically independently of the advances recorded in other countries, so that a great deal of work is often unnecessarily duplicated. On the other hand, each country has a tendency to give preference to the work published in its own language, so that the advances achieved in other countries are either ignored or a knowledge of them is gained only through the medium of an abstract. He proposes that an International Pharmacopoeia Bureau, with its seat in Berne, should be estab-

lished with the object of collecting all publications referring to pharmacopoeial revision, the analysis and assay of drugs. Annually a volume of abstracts of such publications would be issued by this bureau in French, English and German. The Professor is of opinion that the abstracts could be contained in a volume of about 1000 pages. But the work of the bureau should not be confined to abstracting only; he wishes to see it equipped with a laboratory in which assay methods could be subjected to careful revision, with a view to comparing the methods adopted by the various Pharmacopoeias in order to determine the best method. The Brussels agreement merely states the alkaloidal content of a drug, but gives no method of assay, so that the processes prescribed by various Pharmacopoeias yield varying results. Professor Tschirch suggests that the Swiss Pharmaceutical Society should petition the Federal Council to invite members of all the pharmacopoeial commissions to a conference in Berne in order to discuss his proposal and possibly establish a program of work.—*The Chemist and Druggist*.

DRUGGISTS GO ON STRIKE.

As a result of obnoxious regulations prepared by the Minister of Finance, imposing additional taxes on specific medicines and on perfumes, whether made in or imported into Argentina, more than 400 druggists in the city of Buenos Ayres went on a strike and locked up their stores. The objection of the trade was not to the taxes themselves, because these will be put off on the consumer, as is the present stamp tax, but to the mode in which they were to have been imposed and to the harassing and inconvenient regulations for their collection. Especially objectionable is the graduation of the tax according to the price of every article charged to the consumer, the different prices to be indicated by the stamps to be affixed to the bottles, boxes and packets. The expense that would have been incurred in the work of stamping is estimated by the druggists at 25 percent of the tax. The wholesale stores and the retail shops were closed as a protest, and the stores in which perfumery was sold gave notice to the public that the sale of this article was suspended.

The government tried to meet the emergency by authorizing the dispensaries of the Public Assistance Department and the National hospitals to make up medical prescriptions for the public at cost price, and the private hospitals also opened their dispensaries for that purpose, but in a week at most there would have been a scarcity of drugs in those places. The Acting President of the Republic had a conference with the druggists and it was arranged that a committee should be appointed to devise a more satisfactory mode of collecting the new tax.—*Voice of the Retail Druggist*.

Papers Presented to Local Branches

OBSERVATIONS ON THE KEEPING PROPERTIES OF DIGITALIS AND SOME OF ITS PREPARATIONS.*

ROBERT A. HATCHER, M. D., AND CARY EGGLESTON, M. D.

The opinion is prevalent among both physicians and pharmacists that digitalis and its preparations undergo deterioration with considerable rapidity. Certain manufacturers have made much of this belief in the claims put forth regarding the advantages of their specialties, which, of course, are said not to be subject to such deterioration. In addition, however, to these obviously interested claims we find reports of great loss in activity of the leaf coming from men of such reputation as Focke,¹ who found deterioration amounting to 76 percent of the original value in two and three-fourths months in a leaf containing about 12 percent of moisture. He found a similar loss in one year in a leaf having 6 to 8 percent of moisture; leaves with 6.5 percent of moisture lost from 14 to 53 percent in strength in a year; those having 3 percent of moisture lost 15 percent in activity in the same period; and there was 5 percent loss in a year when the moisture had been reduced to 1.5 percent, the low point recommended by Focke to ensure the keeping properties of the leaf.

Houghton and Hamilton² report their results in a series of observations upon the loss of potency of different digitalis preparations. An extract of digitalis made by percolation with fairly strong alcohol showed, on tests of eleven samples, an average loss of activity of about 40 percent in a period of five years—an annual loss of about 8 percent. Eight samples of a fluidextract of digitalis, made according to the U. S. P. VII, with a menstruum of 62.5 percent alcohol, showed an average loss of 25 percent in six years—an annual loss of about 4 percent. Eleven samples of fluidextract of digitalis made according to the U. S. P. VIII, using 48 percent alcohol as the menstruum, showed an average loss of 10 percent per year, or a total loss in activity of 35 percent in three and one-half years. Lastly, six samples of tincture of digitalis made according to the U. S. P. VIII showed a loss in potency of 27 percent in three years—an annual loss of 9 percent. These results would seem to show that the official alcoholic fluid preparations of digitalis undergo deterioration at a rate ranging from 4 to 10 percent per year, varying somewhat in relation to their alcoholic content.

England³ says of the commercial fluidextract of digitalis, "it is, largely, a concentrated hydro-alcoholic solution of certain proximate principles, or their decomposition products arising from the use of heat." He cites an observation of

*Read before the New York Branch, April 14, 1913.

Roger, giving no reference, however, to the effect that a 5 percent maceration of digitalis, when concentrated by 6.6 percent (sic!) by heat on a water-bath, deteriorated to such an extent that it required sixty times as much after concentration as before to yield its toxic dose.

Hale⁴ cites the observations of others on the question of deterioration, and remarks that it would seem to be fairly well established that the leaves should be dried quickly and carefully, and be properly stored so as not to become moist. Hale thus accepts Focke's views, at least to a certain extent. He does not believe, however, that it is necessary to reduce the moisture in the leaves to as low as 1.5 percent, as suggested by Focke, and maintained by certain manufacturers who prepare a specialty along these lines. Hale reports that leaves which had been stored for eight years in a paper bag, and which contained 9.1 percent of moisture, gave a titre of 750 mg. per kilo of frog by the one hour method. Another sample which had been stored in a cloth bag for three years, and which contained 5.8 percent of moisture, required only 500 mg. to kill a kilo frog. A third specimen required 550 mg. per kilo of frog, although it contained 7.8 percent of moisture and had been kept in a paper bag for two years. Leaves kept in a cloth bag for a year, and having a moisture content of 9.4 percent, also gave a frog titre of 500 mg. per kilo. By way of comparison it may be stated that a fresh specimen of select English leaves, having 7.3 percent of moisture, showed 700 mg. per kilo of frog as its titre, thus: three of the old samples showed an activity greater than that of the fresh, high grade sample of English leaves. The fourth showed an activity about equal to that of the fresh English leaf, though it had been kept in a paper bag for eight years, and in spite of the fact that it contained 9.1 percent of moisture.

Hale found that a sample of mouldy leaves showed a deterioration of about 90 percent in one year, and he cites Focke as having found that a specimen which gave a valor of 4.36 showed a valor of only 1.6 a year later, having become mouldy in the interim. It would be a useless waste of time to consider these mouldy specimens further for, of course, they should never be used in any case.

Several observers have contended that heat caused deterioration in digitalis. Some of these are cited by Hale, who then gives some of his own observations which tend to show that temperatures below 120° C. maintained for a moderate length of time do not affect commercial samples of the leaf. This is also borne out by the recommendation of Focke to prepare the leaf for keeping by drying it rapidly with the aid of moderate heat.

Two tinctures of digitalis, made with 70 percent alcohol, in Hale's hands showed a frog titre after eight years which was equal to that of the average fresh tincture prepared from a high grade new specimen of English leaf. On the other hand, assays of a number of digitalis preparations obtained in the open market showed a little deterioration in twenty-two months. Three samples of official fluidextract lost 4.3, 6.9, and 8.7 percent, respectively, in this time. Four non-official preparations, obtained at the same time and under like conditions, showed deterioration from 14.3 to 33.3 percent in the same interval of time.

Moran⁵ records a number of observations, which include some contradictory results, made upon different samples of tinctures of the same age; thus, one showed no deterioration in four years, while another is stated to have appeared

"to have deteriorated considerably," in the same time. He also tested a tincture which was twenty-four years old and one made from an extract which was nineteen years old. In the case of both of these he says that the activity was probably due to the saponin present, inferring that they retained no digitalis action at all. In the meager details that he gives, however, he states that the perfusion of 20 cc. of the twenty-four year old specimen through the heart of a frog caused "No tonic effect, acceleration of beat; systolic arrest." Of the tincture from the nineteen year old extract only 11 cc. were required to give, "No tonic effect; no slowing; systolic arrest." When the tincture which had not deteriorated was used slowing and tonic effect were observed and systolic arrest was caused by 12 cc. It is true that the typical digitalis action on the frog's heart is early slowing with the so-called 'tonic effect,' and systolic arrest is the typical end reaction. However, it is not infrequent to see a heart poisoned with digitalis react atypically with no slowing, or even with acceleration, and in any case the stage of slowing is usually soon followed by one of acceleration. It is quite possible that Moran's frogs happened to react atypically, or that the stage of slowing was brief and overlooked, the heart passing into that of acceleration. Clark⁶ perfused frogs' hearts with digitonin, the saponin body of digitalis, and found that, while it caused "systolic effect," its action was, * * * produced instantaneously, but it is not complete, the auricles and part of the ventricles continuing to beat for some hours." Further, he found that in the concentration of 0.01 mg. per cc. of Ringer's solution it has no action, while the action described above is produced when the concentration is raised to 0.1 mg. per cc. of fluid. It is probable that the results reported by Moran were not due to saponin alone, for it is doubtful if this substance is present in the tincture in sufficient concentration to have any effect upon the heart such as that described. This is supported by Kiliani,⁷ who states that there are but the merest traces of digitonin in digitalis. Certain it is that the end reaction of systolic arrest is a typical digitalis action, and is not what Moran terms a "saponin effect." If we consider, as we are almost compelled to do, that the systolic arrest seen by Moran was due to digitalis action and not to saponin, then his twenty-four year old tincture still possessed 60 percent of the activity of his undeteriorated tincture, and the nineteen year old extract showed no deterioration.

Moran's own conclusions are to the effect that a tincture should retain its activity for two or three years, but it is difficult to interpret Moran's results.

Goodall,⁸ in a note on the keeping properties of the tincture of digitalis concludes that the "tincture of digitalis probably retains its full activity for one year, but that after that period deterioration of its potency to an important extent is likely to take place." His experiments are not given in detail, hence it is impossible to determine the exact value which is to be placed upon his findings, particularly as the information given suggests certain decided defects of technic and control.

Haynes (cited by Goodall without reference) is stated to have found that tincture of digitalis would keep for two years without material change in activity. He kept his specimens in the dark.

We have cited sufficient evidence to show the trend of opinion, and it may be mentioned that the pharmacopoeias of several countries, namely, the French,

Swiss and German, require that the supplies of digitalis leaf be renewed annually. The German pharmacopœia has adopted the recommendations of Focke to the effect that the leaf should be dried over calcined lime and kept in small, completely filled glass containers, protected from light and moisture.

In spite of the general consensus of opinion to the effect that age, moisture, light and heat, alone or variously combined, according to the observer, cause marked and rapid deterioration in digitalis leaves and alcoholic preparations, we long since came to a contrary opinion, for we had observed that samples of powdered leaf which had been in the laboratory in cardboard containers for several years, and tinctures prepared from these leaves at different times in the past few years retained their activity almost, if not quite, unimpaired. Stimulated by this apparent anomaly, we undertook an investigation of the question of deterioration of digitalis leaf and some of its preparations.

We began by making new tests of the activity of our own old samples of the leaf and of tinctures made therefrom. Comparing the results of these tests with the records of previous ones, we found that none of the specimens which were four or five years old showed any material deterioration. These samples of leaf and tincture had been kept without any special care, the tinctures being stored in glass-stoppered bottles and exposed to the light and temperature changes of the laboratory. The leaf, as has been mentioned, was kept in the original cardboard containers, and not protected in any way from either heat or moisture changes as these occurred in the atmosphere of the laboratory, but it should be said that the store room is unusually dry for this climate. The cat method was employed for the estimation of the activity of the specimens, and in some few instances we also used the one hour frog method with results quite in accord with those obtained with the cat. We sought to obtain some older specimens than ours, and, through the courtesy of E. R. Squibb & Sons, and Gilpin, Langdon & Company, we were supplied with samples of the leaf, ground and unground, tinctures, extracts, and fluidextracts ranging from less than one to more than thirty years old. With some of these we conducted tests on both cats and frogs.

A sample of German digitalis which had been kept in paper for three years on a jobber's shelf was received in the form of No. 60 powder and was found to contain 7.5 percent of moisture. It gave a cat unit of 110 mg. per kilo of cat weight. A sample of English leaf in fine powder, which had been kept on a shelf in paper for three years gave a cat unit of 128 mg., and it contained 6 percent of moisture. Both of these were considered by the jobbers as being entirely worthless except as specimens. The fallacy of this view is obvious, for each was found to have an activity about equal to that of the average fresh specimen of good quality. By the cat method the average unit for digitalis, in terms of leaf, is 100 mg. per kilo of cat weight; the range of variation in activity of different fresh specimens of good quality runs from 75 mg., for the most active samples, to 120 mg. for the less active. Since these two showed no deterioration we then examined the oldest specimen of leaf which we had obtained.

This was a sample of about 12 gm. of whole dried leaf which had been kept in a glass-stoppered bottle for not less than twenty-five years. The entire specimen was powdered and passed through a No. 60 sieve. After thorough mixing,

10 gm. of this powder were extracted as follows: The powder was moistened with 40 cc. of diluted alcohol (U. S. P.) and allowed to stand for twenty-four hours in a cylindrical percolator; it was then packed tightly and percolation was started; this was allowed to continue until about 30 cc. were obtained; percolation was then interrupted, maceration continuing until the following day, when percolation was again allowed to proceed until 100 cc. had been obtained.

Three tests by the cat method gave the following units: 74 mg., and 95 mg., and 82 mg., an average cat unit of 87 mg. per kilo. Perfectly fresh samples of the most active leaf which we have been able to procure have not shown a lower cat unit than 65 mg. per kilo. This twenty-five year old leaf was, therefore, of very high activity, better even than the average fresh specimen. The leaf was very dry and, although we did not determine its moisture content, we may assume, according to the statements of Focke,¹ that it contained much more than his required minimum of 1.5 percent, especially as the specimen had not been preserved with any particular care. This specimen, therefore, had almost certainly undergone no deterioration during the twenty-five years of standing.

The cat has been said, incorrectly we believe,⁹ to be unsuitable for the detection of deterioration owing to the toxic nature of the products of such deterioration, but none of our cats showed atypical effects.

We also examined this specimen by the one hour frog method, and found the fatal dose to lie between 900 and 1000 milligrams per kilo of frog, which is about 25 percent higher than the average as determined by Hale, and by Farnlener and Lyons.¹⁰

It is probable, however, that the results obtained by the cat method are the more nearly correct in this case, for it is well known that frogs vary considerably in susceptibility to the digitalis bodies, such differences have been discussed fully in the article previously cited,⁹ and we would refer the reader to that for confirmation of the statement.

Turning to the fluid preparations, we found that a sample of the fluidextract made over ten years ago gave a cat unit of 110 milligrams of leaf per kilo. This specimen was made with 50 percent alcohol as the menstruum, and probably showed no deterioration.

A sample of fluidextract of digitalis which was said to be "not less than thirty years old" was then tested on the cat, three tests giving units of 130, 162, and 153 milligrams per kilo, respectively, an average cat unit of 148 milligrams, the action being perfectly typical of digitalis. As we have no means of knowing the original activity of the leaf from which this fluidextract was made we might assume that it was of the average strength, that is, that it would originally have shown a unit of about 100 milligrams. On this basis we might suppose that in more than thirty years it had declined only about 40 percent in activity. As a matter of fact, it was more active by 32 percent than the average of thirteen specimens of fluidextract obtained in commerce in the present year, the explanation being that it is especially difficult to prepare a fluidextract of digitalis which represents the full activity of the leaf.

This thirty-year-old fluidextract, having been made according to the Pharmacopoeia of 1870, had a menstruum composed of about 70 percent alcohol, 20 percent glycerin, and 10 percent water. Tests of this specimen by the one-hour

frog method gave a fatal dose of about 1300 milligrams per kilo of frog. This is almost certainly too high a figure, and may be attributable to the presence of glycerin in the preparation. Glycerin often delays absorption from the lymph-sac of the frog and makes the specimen which contains it seem weaker than it actually is⁹, but this is without influence in the case of tests made on the cat by our method.

This specimen of fluidextract of digitalis had, therefore, probably undergone no deterioration in thirty years, since, as stated, it was far more active than the average *fluidextract* of digitalis now in use.

England³ contends that heat, even when moderate and applied for a comparatively short time, causes enormous loss of activity in the fluid preparations of digitalis. Focke controverts this statement by the results of his experience in the concentration by heat on the water bath of aqueous infusions of digitalis when they are too weak to be tested on the frog. He recommends concentration by 50 percent, and finds that the process causes no reduction in activity. In this country nearly all of those who use the frog method of standardizing digitalis preparations employ heat to reduce the amount of alcohol before testing such preparations as the tincture.

To these statements with regard to the influence of heat we may add that we found a sample of solid extract of digitalis, which was made in 1908, and which was said to represent two and one-half times the weight of leaf, to have a cat unit of 52 mg. per kilo (that is, 128 mg. of the leaf). There was no obvious loss in activity, although the preparation had been reduced to the consistency of a solid extract by means of evaporation in the presence of heat.

At this point we decided to stop further testing of the dried leaf and of those pharmacopoeial preparations of digitalis made with a menstruum containing 50 percent or more of alcohol, for it was evident that deterioration does not occur to any considerable degree in such forms of the drug under ordinary conditions.

It is unnecessary to mention the infusion further than to state that frequent observations confirm the well-known fact that it is prone to undergo rapid deterioration even in the presence of a small amount of alcohol, such as is now used.

Deterioration of digitalis in the presence of water is further well illustrated by the following experience: We diluted a tincture of digitalis of known strength with nine parts of normal saline solution and set it aside, closely stoppered, for seventeen days. It was exposed to the light during this time, and for the most part was in an unheated room, though on some days it was exposed to a temperature of 70° F. for as much as five hours at a time. On the seventeenth day after dilution we tested this solution on cats and found a unit of 81.5 mg. of leaf per kilo. (Three tests, 84.6, 71.0, and 89.0 mg. per kilo, respectively). On the same day we tested the tincture from which the dilution had been made and found it to have a cat unit of 62.2 mg. of leaf per kilo (two tests, 61.8, and 62.7 mg., respectively). In a period of seventeen days, then, this aqueous dilution of a tincture of digitalis had lost 31 percent of its original activity. It is remarkable that it had not lost more than this, and the low temperature of the room may be partly responsible for its comparatively moderate deterioration.

The deterioration of aqueous preparations of digitalis has long been recog-

nized and this fact has recently been recalled by Cushny,¹¹ who says of strophanthus, squill and digitalis that "Their active principles readily undergo decomposition when the tincture is diluted with water. * * *"

We are disposed to remark that it is irrational to dispense the tincture of digitalis already diluted with water, or with an aqueous vehicle. The physician should order the necessary dilution to be made by the patient each time that he takes the prescribed dose, or should employ a vehicle containing a sufficient amount of alcohol.

There is one other preparation which deserves notice, only to be condemned. This is the acetic fluidextract. A sample of this preparation which was made in 1901 was found to be practically without digitalis action. In order to avoid the disturbing influence of the acetic acid present in the specimen 5 cc. were neutralized with an excess of sodium bicarbonate and evaporated on the water bath to a soft extract. This was treated several times, while still on the water bath, with strong alcohol, the alcoholic extract was decanted and evaporated. It was then taken up with 5 cc. of diluted alcohol, making a clear solution. This was further diluted with normal salt solution to make 50 cc. This solution was then tested on a cat in the usual way. At the end of an hour the animal had received a quantity which represented 1000 mg. of digitalis leaf per kilo. As the animal showed no perceptible effect save slight slowing of the heart (due, in all probability, to the fluid injected), it was released. Five hours later it had still shown no positive digitalis effect.

This same preparation—acetic fluidextract—was injected into the ventral lymph-sac of each of three frogs. The first weighed 14.5 gm. and received 0.25 cc. total, the second 21 gm. and received 0.5 cc. total, and the third weighed 21.5 gm. and was injected with 1 cc., an amount equal to about 5000 mg. per kilo of frog. None of the frogs died.

A second sample of acetic fluidextract of digitalis was tested to see if a fresh preparation was active. This sample was made on January 16, 1913, and was tested on the 29th of the same month, only thirteen days after its preparation. It was found to have a cat unit of 925 mg. per kilo, or, roughly, it had only about 10 percent of its supposed activity.

From the foregoing it is obvious that this preparation is worthless. This is only what is to be expected, for the decomposition of glucosides by dilute acids is universally recognized.

In addition to these tests of the leaf and galenical preparations we have tested some of the proprietaries with reference to their deterioration. One of these, which has been claimed to be permanent, namely, Digalen (liquid), gave the following results:

Two specimens obtained in 1912 were tested at the same time and one gave a cat unit of 1.52 cc. per kilo, while the other gave a unit of 2.45 cc. per kilo. A specimen obtained in 1908, and kept sealed as originally sent out, gave a cat unit of approximately 3 cc. per kilo when tested in November, 1912. In the case of the first two specimens, obtained fresh at the same time, the stronger was almost 100 percent more active than the weaker. The specimen of 1908 was only about half as active as the one of 1912. It is fair to assume that all of the batches of digalen are originally made of the same activity, and if this assumption be correct

this preparation is subject to far more rapid deterioration than either the digitalis leaf or its galenical preparations, which contain 50 percent or over of alcohol. The examples cited are but representative of our results with many different specimens of digalen.

It remains for us to discuss briefly some of the opposed findings here recorded.

All whose observations have been cited used frogs exclusively as the test animals in their determinations. Cloetta has contended that fresh digitalis contains little or no digitoxin, but that this constituent is developed during storage. It is known that digitoxin is irregularly and relatively slowly absorbed from the lymph spaces of the frog. If Cloetta's contention is correct the development of digitoxin during keeping would have a tendency to make the drug appear to have undergone deterioration when tested on the frog. On the other hand, such a change would not materially affect the activity of the drug when tested by the cat method, for in this the factor of absorption is entirely eliminated. The statement of Focke, that it is in the first few weeks after harvest that digitalis deteriorates most rapidly, and to the greatest extent, exactly coincides with the explanation just offered.

CONCLUSIONS.

1. Commercial digitalis leaves of good quality do not undergo any deterioration in many instances as the result of age; in a few cases they do appear to have deteriorated, but only with extreme slowness—at a rate probably not exceeding $1\frac{1}{2}$ to 2 percent a year.

2. The same statement holds for the Pharmacopoeial preparations made with a menstruum containing at least 50 percent of alcohol.

3. Heat below 120° C., applied for a reasonable length of time, does not cause deterioration in digitalis leaves, aqueous infusions, or alcoholic preparations; in the latter case even though the preparation be reduced to a soft solid.

4. The acetic fluidextract is worthless.

5. Liquid Digalen is decidedly inferior to the alcohol-containing galenical preparations of digitalis in so far as permanency is concerned.

¹Arch. d. Pharm., 1903, cxli, 128.

²Am. Jour. Pharm., Oct., 1909.

³Phil. Polyclinic, Jan., 1897.

⁴Hygien. Lab. Bull. No. 74, 1911.

⁵Medical Chronicle, No. 55, 1911-1912, p. 1.

⁶Brit. Med. Jour., 1912, II, n. 687.

⁷Arch. der Pharm., ccxliii, p. 7.

⁸Brit. Med. Jour., I, 1912, p. 887.

⁹Amer. Jour. Pharm., lxxxv, 1913, p. 99.

¹⁰Proc. Am. Pharm. Association, L, 1902, p. 415.

¹¹Brit. Med. Jour., 1912, II, p. 685.

Of General Interest

MINUTES OF A MEETING OF THE EXECUTIVE COMMITTEE OF THE NATIONAL DRUG TRADE CONFERENCE HELD AT THE NEW WILLARD HOTEL, WASHINGTON, JUNE 9, 1913.

In pursuance of the call quoted below the Executive Committee of the National Drug Trade Conference met at the New Willard Hotel, Washington, D. C., Monday, June 9, 1913, at 10 a. m. Present: John C. Wallace, Chairman, Charles M. Woodruff, Secretary, Prof. James H. Beal, C. Mahlon Kline, and Dr. W. C. Anderson as alternate for James F. Finneran.

The Secretary read the following call:

"In pursuance of the authority vested in me by Conference resolution No. 2, I hereby designate the members of the Executive Committee to constitute the special Committee authorized by said resolution to meet at the New Willard Hotel, Washington, D. C., Monday, June 9, 1913, at 10 a. m.

"This Committee will also meet with Mr. Harrison and Dr. Wright to approve or amend the enclosed copy of the proposed Harrison Bill which Mr. Harrison will introduce after approval by this Committee.

JOHN C. WALLACE, President."

Mr. Adolph G. Rosengarten, Mr. Samuel Rosengarten, Mr. S. L. Hilton, Mr. E. C. Brockmeyer representing the Coca Cola Co. of Atlanta, Ga., and Mr. M. I. Wilbert of the American Medical Association being present during the session were on motion of the Secretary unanimously accorded the privileges of the floor.

The Committee then considered paragraph by paragraph the draft of the bill referred to in the President's call and made many amendments to the same, after which at about 4 o'clock the Committee and its visitors repaired to the office of James F. Curtis, Assistant Secretary of the Treasury, where it met Mr. James F. Curtis, Surgeon-General Charles F. Stokes, Chief of the Bureau of Medicine and Surgery, Mr. Talbott of the Law Division of the Internal Revenue Department, and Dr. Hamilton Wright. Mr. Curtis presiding, having called the meeting to order, Mr. Charles M. Woodruff proceeded to state the amendments to the draft which had before received the approval of Dr. Hamilton Wright and the officers of the government interested, which amendments, aside from unimportant changes to correct obvious stenographic errors and to make portions of the bill consistent with the amendments of other portions, were as follows:

First. Eliminate the words "qualified by state or territorial law or by the laws of the District of Columbia to administer the aforesaid drugs," occurring in paragraph first. Mr. Woodruff advanced the argument that these words endangered the validity of the measure, should it be passed; and would give its opponents a strong weapon to use during the consideration of the measure by Congress; inasmuch as its constitutionality could be attacked on two grounds: First, that the provision amounted to a delegation of the legislative power en-

trusted to Congress, to the legislatures of the states; and, second, that it would effect a lack of uniformity in the law, since a physician in one state might not be qualified to administer drugs when, under the same conditions, he might be so qualified in another state. The reasons were considered valid by the representatives of the several departments of the government, and the amendment agreed to. This has equal reference to other paragraphs of the bill, as for instance paragraph A of Section 3 where the words "lawfully authorized practitioner of medicine, dentistry or veterinary medicine" were amended to read: "physician, dentist, or veterinary surgeon registered under this Act."

The next amendment discussed was the elimination from the draft of the second paragraph of Section 1, which paragraph will be found quoted at length in the memorandum hereafter made a part of these proceedings. Mr. Woodruff stated the Conference was not willing to entrust such arbitrary power as the provision contemplated to a medical board, or for that matter any officer or official; that the measure did not contemplate that any one by virtue of it should be granted judicial power to determine who ought and who ought not to register, and in effect who might or who might not dispense and practice medicine; and that the provision really granted both legislative and judicial power to the board it created.

Mr. Curtis inquired whether the Conference was at all fearful that such a board as the provision created would deny registration to any legitimate manufacturer, dealer, or practitioner; and remarked that he felt that there ought to be some provision in the law for preventing the registration of those who sold improperly or unlawfully. Dr. Hamilton Wright joined in the discussion by saying that that was the very object of the provision.

Mr. Woodruff rejoined by pointing out that, whatever might be properly done under the interstate commerce clause of the Constitution, the taxing power granted to Congress to provide for the needs of the government could not be used as a police measure for punishing those who had improperly handled these narcotic drugs; that this was a matter entirely up to the states.

Mr. Curtis asked Mr. Woodruff if the power to tax had not been decided to be a power to destroy.

Mr. Woodruff replied that it certainly had, and that Congress had used its taxing powers for the distinct purpose of destroying the importation, manufacture, sale and use of smoking opium, also phosphorous matches; but that in both these instances the tax had applied equally to all and therefore was not invalid for lack of uniformity; while in the present case the proposition was to tax good druggists and physicians and disqualify bad ones. That if it was desired to make a tax analogous to the smoking opium tax and the phosphorous match tax, the tax must be made prohibitive and apply to all importation, all manufacture, all dealing, dispensing, distributing, etc.

Professor James H. Beal then argued the matter at length, emphasizing the fact that this was not an interstate but an *intrastate* measure; that the government had never attempted by the exercise of its taxing power to invade the police powers reserved to the state; that this would be a strong and unanswerable objection to any measure containing a provision of this character, and that the several states have their own more or less efficient statutes regulating the

sale of opium, cocaine, etc., within their several borders; and only needed a federal provision of some such character as the one proposed to prevent interstate commerce being subverted to the practical nullification of their own police laws; that this law would give the authorities in the several states an incontrovertible record of those who sold within state jurisdiction; and that the courts had already decided that the United States could not use its taxing power for the purpose of going within the state and exercising police powers there. Although Dr. Beal was very clear in his exposition of the difference between the proposed measure as affecting *intrastate* business and a measure affecting only *interstate* business, no representative of the government seemed to appreciate the distinction. Mr. Samuel Rosengarten, of Philadelphia, several times during the discussion emphasized reasons already given and gave some original ones in support of the proposition to eliminate the provision.

During the discussion Surgeon General Stokes left, having whispered a few words to Dr. Hamilton Wright. Afterwards Dr. Wright explained that Surgeon General Stokes was very tenacious of the provision on account of the fact that the Army and Navy Departments were having much trouble in the ranks with those who use morphine and cocaine and purchased and distributed it to their comrades and shipmates who also use it; and that some power should reside somewhere to prohibit these from registering and paying the tax. It was suggested to Dr. Wright that plenary power resided in both the army and the navy to correct any abuse of this character. The discussion on this paragraph closed without results.

The next important amendment the Conference recommended was that physicians' prescriptions should be dated as well as signed and this was concurred in by the representatives of the government without discussion.

The next important amendment was a provision inserted at the end of paragraph 2, making it unlawful for any person to obtain by means of the order forms provided in the measure any of the drugs inhibited by the measure for any other than a lawful purpose.

The next important amendment recommended by the Conference was a provision at the end of Section 4, to make it clear that the delivery on written prescriptions should not be unlawful.

The next important amendment was reducing the amount of heroin in each fluidounce permitted to be sold irrespective of the law from 1-3 grain to 1-12 grain.

The next important amendment was the elimination of Section 8, which as written was indefinite, and would have made possession evidence of any sort of violation of the law; and the substitution thereof of an entire new section which makes possession by an unregistered person itself unlawful subject to certain exceptions, and places the burden of proving the exceptions upon the defendant. This section is quoted in full in the bill made a part of these proceedings.

This Conference of the Executive Committee of the National Drug Trade Conference with the department officers before named closed about 5:30 o'clock with the net result that there was an entire agreement between the Conference and the representatives of the executive branch of the government as to the draft of the bill under discussion except with reference to the provision creating

the Commissioner of Internal Revenue, the Surgeons General of the Army, Navy, Public Health Service, and the Chief of the Bureau of Chemistry, a board to practically decide who might register under the act and under what condition such registration might be suspended or revoked.

The Executive Committee of the Drug Trade Conference repaired to their room at the New Willard Hotel immediately, and took the action indicated in the memorandum hereinafter made a part of these proceedings. After the appointment of the Committee named in said memorandum to represent the Executive Committee and the Drug Trade Conference the meeting adjourned.

June 10th, having drafted the memorandum and the bill as the Conference had amended it, Mr. John C. Wallace, Professor James H. Beal and Mr. Charles M. Woodruff, the committee appointed to do so, proceeded to the office of Dr. Hamilton Wright of the State Department, and presented to him the memorandum and draft of bill in question, explaining that the Conference could not recede from its position, and that the united branches of the drug trade of the United States would not only support but vigorously oppose any measure that undertook to give any board or officer of the government the power to decide who should import, export, manufacture, compound, deal in, dispense, sell, distribute or give away any opium or cocoa leaves, etc. Dr. Wright received the Committee very courteously and again explained his position, saying in substance that it did seem to him the law would be ineffective unless some board had some power to prevent an improper person from registering. Mr. Beal, acting as spokesman for the Committee, agreed that the end sought was desirable but contended that the means provided for were improper and would not accomplish the result expected. He suggested that the Committee would have no objection to a provision authorizing the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, to make proper rules and regulations for the enforcement of the act, especially as it was understood that the Commissioner already had that power by virtue of a general statute. Dr. Wright stated that he was expecting Mr. Talbot, of the Law Division of the Commissioner of Internal Revenue Department, to drop in any moment by previous appointment and that he desired his views upon the subject.

Afterward during the conversation Mr. Talbot dropped in. Dr. Wright asked him whether he had given the matter any further consideration and what he thought of it. Mr. Talbot said in almost these exact words: "Frankly speaking, Dr. Wright, I think these gentlemen are right, and that the bill is much stronger without the provision you are contesting for than with it," whereupon Dr. Wright says: "Well, then, let it go at that." Mr. Talbot further explained that the provision contemplated what the Department of Internal Revenue had always understood it could not accomplish even with the aid of the law; that the Department had been advised that it must receive the tax provided for by statute by whomsoever offered, giving as an instance the case of Indian reservation where a law of the government itself prohibits the sale of liquor, and the department had been advised that, notwithstanding this law, if one on an Indian reservation offered to pay the tax the department must accept it. He suggested the insertion of a clause giving the Commissioner power to make reasonable rules similar to that contained in other revenue measures and quoted from a

revenue law the phrase agreed to in the shorter memorandum quoted in the next paragraph. As a result of this Conference Dr. Wright and Mr. Woodruff jointed in dictating the understanding to Dr. Wright's stenographer, which was afterwards officially signed as follows:

"The attached is a Bill approved by the Executive Committee of the National Drug Trade Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913; approved in conference with Dr. Hamilton Wright at the Department of State, June 10, 1913, with the addition of the following to the last paragraph of Section one of the Bill: 'That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect.'"

JOHN C. WALLACE,

President of the Executive Committee of the National Drug Trade Conference.

Attest: CHARLES M. WOODRUFF, Secretary.

This memorandum was signed attached to two copies of the Bill, one of which Dr. Wright wanted for Mr. Harrison, who is to introduce it, and the other he desired to submit to the Secretary of the Treasury and the Judicial Department with his letter of approval. There being no objections on the part of these Departments it is understood the bill is to be introduced by Mr. Harrison.

The following is the memorandum and the bill heretofore referred to in these proceedings:

MEMORANDUM.

The attached is a bill approved by the Executive Committee of the National Drug Trades Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913. It is based upon a draft which had had the approval of Dr. Hamilton Wright; and embodies changes in the latter submitted to Assistant Secretary of the Treasury Curtis, Mr. Talbot of the Internal Revenue Department, and Dr. Hamilton Wright, all of which were concurred in, except the elimination of the following from the second paragraph of Section 1:

"That the Commissioner of Internal Revenue, the Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the Public Health Service and the Chief of the Bureau of Chemistry of the Department of Agriculture be, and they are hereby constituted a Board with authority, subject to the approval of the Secretary of the Treasury, to promulgate from time to time, such rules as may be necessary in the judgment of the said Board to govern registration under the provisions of this Act, or the suspension and revocation of such registration."

Please note in Section 8 the insertion of the words "and also a violation of the last paragraph of Section 1 of this Act," intended to meet suggestions of Dr. Wright.

Practically, then, the only issue between the Executive Committee of the Drug Trade Conference and Dr. Hamilton Wright is the elimination of the provision quoted above; respecting which the Executive Committee unanimously adopted and submitted the following:

WHEREAS, The apparent effect of the second paragraph of the first section of the proposed Antinarcotic bill as at present framed is to confer upon a special board the power to make rules and regulations which might have the effect of refusing registration to or the suspending or revoking of the registration of persons engaged in strictly intrastate business; and

WHEREAS, The members of this meeting are opposed to the placing of such extreme power in the hands of any board or public officer; and

WHEREAS, Under existing law the Commissioner of Internal Revenue has ample power to make necessary regulations for the efficient enforcement of the proposed law imposing a revenue tax upon traffic in narcotic drugs; therefore be it

Resolved, That the President of this Executive Committee appoint a Com-

mittee of Three, of which he shall be a member, to call upon the Hon. Francis Burton Harrison and Dr. Hamilton Wright, and inform them that the Conference is unalterably opposed to entrusting the power to make rules and regulations denying the right to registration, or revoking or suspending registrations already effected, to any special board or officer.

The Committee so constituted consists of John C. Wallace, Prof. James H. Beal and Charles M. Woodruff.

Signed, JOHN C. WALLACE,

President of the Executive Committee of the National Drug Trade Conference.

Attest: CHARLES M. WOODRUFF, Secretary.

The attached is a Bill approved by the Executive Committee of the National Drug Trade Conference at a meeting held at the New Willard Hotel, Washington, June 9, 1913; approved in conference with Dr. Hamilton Wright at the Department of State, June 10, 1913, with the addition of the following to the last paragraph of Section one of the Bill: "That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall make all needful rules and regulations for carrying the provisions of this Act into effect."

JOHN C. WALLACE,

President of the Executive Committee of the National Drug Trade Conference.

Attest: CHARLES M. WOODRUFF, Secretary.

THE NATIONAL DRUG TRADE CONFERENCE BILL.

A BILL¹

To provide for the registration of, with collectors of internal revenue and to impose a special tax upon, all persons who produce, import, export, manufacture, compound, deal in, dispense, sell, distribute or give away opium or coca leaves, their salts, derivatives or preparations; and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That on and after — every person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away opium or coca leaves or any compound, manufacture, salt, derivative or preparation thereof shall register with the collector of internal revenue of the District his name or style, place of business and place or places where such business is to be carried on, provided, that the office, or if none, then the residence of any person, shall be considered for the purposes of this Act to be his place of business. At the time of such registry and on or before the first day of July, annually thereafter, every person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away any of the aforesaid drugs shall pay to the said collector a special tax at the rate

of \$1 per annum; *Provided*, That no employe of any person who produces, imports, exports, manufactures, compounds, deals in, dispenses, sells, distributes, or gives away any of the aforesaid drugs acting within the scope of his employment shall be required to register or to pay the special tax provided by this section; *Provided further*, That the person who employs him shall have registered and paid the special tax as required by this section.

It shall be unlawful for any person to produce, import, export, manufacture, compound, deal in, dispense, sell, distribute or give away any of the aforesaid drugs without having registered and paid the special tax provided for in this section.

That the word "person" as used in this Act shall be construed to mean and include a partnership, association, company or corporation, as well as a natural person; and all provisions of existing law relating to special taxes, so far as applicable, including the provisions of 3240 of the Revised Statutes of the United States, are hereby extended to the special tax herein imposed.

Sec. 2. That it shall be unlawful for any person to sell, barter, exchange or give away any of the aforesaid drugs except in pursuance of a written order of the purchaser or person to whom such article is given, on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue. Every person who shall accept any such order, and in pursuance thereof shall sell, bar-

¹As finally agreed upon by the Conference representatives and Dr. Hamilton Wright.

ter, exchange or give away any of the aforesaid drugs, shall preserve such order for a period of two years in such a way as to be readily accessible to inspection by any officer, agent or employe of the Treasury Department duly authorized for that purpose, and the State, Territorial, District and municipal officials named in section five of this Act. Every person who shall give an order as herein provided to any other person for any of the aforesaid drugs shall, at or before the time of giving such order, make or cause to be made a duplicate thereof on a form to be issued in blank for that purpose by the Commissioner of Internal Revenue, and in case of the acceptance of such order, shall preserve such duplicate for said period of two years in such a way as to be readily accessible to inspection by the officers, agents, employes and officials hereinbefore mentioned. Nothing contained in this section shall apply:

a. To the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon registered under this act in the course of his professional practice only; *Provided*, however, that such physician, dentist or veterinary surgeon shall be in personal attendance upon such patient;

b. To the sale, dispensing or distribution of any of the aforesaid drugs by a pharmacist to a consumer under and in pursuance of a written prescription, issued by a physician, dentist or veterinary surgeon registered under this Act; *Provided*, however, That such prescription shall be dated and shall be signed by the physician, dentist or veterinary surgeon who shall have issued the same; and *Provided further*, That such Pharmacist shall preserve such prescription for a period of two years in such a way as to be readily accessible to inspection by the officers, agents, employes, and officials hereinbefore mentioned.

c. To the sale, exportation, shipment or delivery of any of the aforesaid drugs by any person within the United States of America to any person in any foreign country.

The Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, shall cause suitable forms to be prepared for the purpose above mentioned, and shall cause the same to be distributed to Collectors of Internal Revenue for sale by

them to those persons who shall have registered and paid the special tax as required by section one of this Act in their districts respectively; and no collector shall sell any of such forms to any person other than a person who has registered and paid the special tax, as required by section one of this Act in his district. The price at which such forms shall be sold by said collectors shall be fixed by the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, but shall not exceed the sum of ——— per hundred. Every collector shall keep an account of the number of such forms sold by him, the names of the purchasers, and the number of such forms sold to each of such purchasers. Whenever any collector shall sell any of such forms he shall cause the name of the purchaser thereof to be plainly written or stamped thereon before delivering the same; and no person other than such purchaser shall use any of said forms bearing the name of such purchaser for the purpose of procuring any of the aforesaid drugs, or furnish any of the forms bearing the name of such purchaser to any person with intent thereby to procure the shipment or delivery of any of the aforesaid drugs. It shall be unlawful for any person to obtain by means of said order forms any of the aforesaid drugs for any purpose other than the use, sale or distribution thereof by him in the conduct of a lawful business in said articles, or in the legitimate practice of his profession.

Sec. 3. That any person who shall be registered in any internal revenue district under the provisions of section one of this Act, shall, whenever required so to do by the Collector of the District, render to the said Collector a true and correct statement or return, verified by affidavit, setting forth the quantity of the aforesaid drugs received by him in said internal revenue district during such period immediately preceding the demand of the Collector, not exceeding three months, as the said Collector may fix and determine; the names of the persons from whom the said articles were received; the quantity in each instance received from each of such persons, and the date when received.

Sec. 4. That it shall be unlawful for any person who shall not have registered and paid the special tax as required by Section one of this Act to send, ship, carry or de-

liver any of the aforesaid drugs from any State or Territory or the District of Columbia, to any person in any other State or Territory or the District of Columbia; *Provided*, That nothing contained in this section shall apply to common carriers engaged in transporting the aforesaid drugs; or to any employe, acting within the scope of his employment, of any person who shall have registered and paid the special tax as required by section one of this Act; or to the written prescriptions of physicians, dentists and veterinary surgeons who have registered under this Act to those who are under the immediate personal care of such physicians, dentists and veterinary surgeons.

Sec. 5. That the duplicate order forms and the prescriptions required to be preserved under the provisions of Section two of this Act, and the statements or returns filed in the office of the Collector of the district, under the provisions of Section four of this Act, shall be open to inspection by officers, agents and employes of the Treasury Department duly authorized for that purpose; and such officials of any State or Territory, or of any organized municipality therein, or of the District of Columbia, as shall be charged with the enforcement of any law, or municipal ordinance, regulating the sale, prescribing, dispensing, dealing in, or distribution of the aforesaid drugs. Each collector of internal revenue is hereby authorized to furnish, upon written request, certified copies of any of the said statements or returns filed in his office to any of such officials of any State or Territory or organized municipality therein, or the District of Columbia, as shall be entitled to inspect the said statements or returns filed in the office of the said Collector, upon the payment of a fee of one dollar for each one hundred words or fraction thereof in the copy or copies so requested. Any person who shall disclose the information contained in the said statements or returns, or in the said duplicate order forms, except as herein expressly provided, and except for the purpose of enforcing the provisions of this Act, or for the purpose of enforcing any law of any State or Territory or the District of Columbia, or ordinance of any organized municipality therein, regulating the sale, prescribing, dispensing, dealing in, or distribu-

tion of the aforesaid drugs shall, on conviction, be fined or imprisoned as provided by Section nine of this Act. And collectors of Internal Revenue are hereby authorized to furnish, upon written request, to any person, a certified copy of the names of any or all persons who may be listed in their respective collection districts as special taxpayers under the provisions of this Act, upon payment of a fee of one dollar for each one hundred names or fraction thereof in the copy so requested.

Sec. 6. That the provisions of this Act shall not be construed to apply to the sale, distribution, giving away, or dispensing of preparations and remedies which do not contain more than two grains of opium, or more than one-fourth of a grain of morphine or more than one-twelfth of a grain of heroin, or more than one grain of codeine or any salt or derivative of any of them in one fluid ounce; or, if a solid or a semi-solid preparation, in one avoirdupois ounce, or to liniments, ointments, or other preparations which are prepared for external use only; *Provided*, That such remedies and preparations are sold, distributed, given away, or dispensed as medicines, and not for the purpose of evading the intentions and provisions of this Act. The provisions of this Act shall not apply to decocainized coca leaves or preparations made therefrom, or to other preparations of coca leaves which do not contain cocaine.

Sec. 7. That all laws relating to the assessment, collection, remission, and refund of internal revenue taxes, including section 3229 of the revised statutes of the United States, so far as applicable to and not inconsistent with the provisions of this Act, are hereby extended and made applicable to the special taxes imposed by this Act.

Sec. 8. It shall be unlawful for any person not registered under the provisions of this Act, and who has not paid the special tax provided for by this Act, to have in his possession or under his control any of the aforesaid drugs; and such possession or control shall be presumptive evidence of a violation of this Section, and also of a violation of the last paragraph of Section 1 of this Act; *Provided*, this section shall not apply to any employe of a registered person having

such possession or control by virtue of his employment and not on his own account; or to any of the aforesaid drugs which has or have been prescribed in good faith by a physician, dentist or veterinary surgeon registered under this Act, or by any United States, State, or municipal officer, board or other authority for purposes of investigation, enforcement of law or otherwise; or to a warehouseman holding possession for a person registered and who has paid the taxes under this Act; or to common carriers engaged in transporting such drugs; *Provided further*, it shall not be necessary to negative any of the aforesaid exemptions in any complaint, information, indictment or other writ or proceeding laid or brought under this Act; and the burden of proof of any said exception shall be upon the defendant.

Sec. 9. That any person who violates or fails to comply with any of the requirements of this Act shall, on conviction, be fined not more than \$2,000 or be imprisoned not more than five years, or both, in the discretion of the court.

Sec. 10. That the Commissioner of Internal Revenue, with the approval of the Secretary of the Treasury, is authorized to appoint such agents, deputy collectors, inspectors, chemists, assistant chemists, clerks, and messengers in the field, and in the Bureau of Internal Revenue in the District of Columbia as may be necessary to enforce the provisions of this Act.

Sec. 11. That the sum of \$150,000, or so much thereof as may be necessary, be, and hereby is, appropriated for the purpose of carrying into effect the provisions of this Act.

Sec. 12. Nothing contained in this Act shall be construed to impair, alter, amend or repeal any of the provisions of the Act of Congress, approved June thirtieth, nineteen hundred and six, entitled, "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines and liquors, and for regulating traffic therein and for other purposes," and any amendment thereof, or of the Act approved February ninth, nineteen hundred and nine, entitled, "An Act to prohibit the importation and use of opium for other than medicinal purposes," and any amendment thereof.

NEW ENGLAND LETTER.

ERNEST C. MARSHALL, Ph. G.

The other day I took a run through one of Boston's beautiful suburbs to get material for use in my letter to the JOURNAL and, invigorated with the pure air and charmed by the peaceful environment and attractiveness of the town, I congratulated one of its knights of the pestle on his surroundings, telling him that many would envy him his location and his life among them. Much to my surprise I found in him one discontented with the very things I thought so admirable. He longed to be in the bustle of the city and a store on Boylston or Tremont streets was the goal for which he was aspiring. Musing on this surprising state of things, it recalled to my mind the thought of how little any one of us knows of what is best for himself, and how often we seek for things that are valueless and not only of no value to us, but those which are positively injurious and harmful.

Shakespeare spoke most truly when he said:

"We ignorant of ourselves,
Beg often our own harms
Which the wise powers deny us
For our good. Thus find we profit
From losing of our prayers."

And what is true of individuals is also true of municipalities. Boston has recently passed through an inordinate enthusiasm over the coming of the ships of the Hamburg American Line to the city. As the Cincinnati came up the harbor she was met by boats filled with enthusiastic citizens who waved German and American flags, who sang patriotic songs and shouted themselves hoarse; the air was rent by screaming whistles; a flood of oratory was let loose; thousands of people,—some say fifty thousand,—went to gaze upon the liner and its captain as though she were a veritable Argo and Captain Schaarschmidt another Jason bearing to each and every one a Golden Fleece.

Now it may be assumed that every one of this fifty thousand people is a thinking being and yet it would be hard to determine what it was in the fact of this ship coming to Boston, to warrant such inordinate enthusiasm. Let us ask ourselves calmly what great thing has really been accomplished? Are Boston's citizens to be made more happy, more wise or

more strong by reason of it? It is by these things that we should judge events, rather than by the simple one of "More business." For business may be of two kinds—paying or losing,—and which kind are we sure that this will bring to us. We may be told that of course it will bring a paying business, but even in that event, it may not bring happiness with it. Money-gathering is not at all a certain means of bringing peace to the mind and happiness to the soul.

A certain Shah of Persia once said that he had sat for fifty years upon the throne. In that time he had daily received the homage of princes and nobles and the people of his realm; his will had been their law; his wishes paramount above all; earth, sea and sky were searched to please him; the most beautiful damsels of the empire were his to enjoy, and all bowed before him. During this time when all envied him, he said that he had kept heedful account of the days when he was truly happy and that they only reckoned three in the half century. May we not draw a lesson from this, and be content with the good we have, rather than to imagine the benefits we would enjoy in some other situation?

WAGES AND TRADE SECRETS.

In a suit for damages for violation of contract, recently tried in a British court, a very interesting side-light was thrown upon the difference in the standard of wages of this country and of England.

It appears from an account of this case, as reported in the *India Rubber Journal* of London, that a man named James Thomas Tuck, a rubber worker, was employed by the firm of Ingram and Son, which firm has the reputation of possessing many trade secrets and improved processes which make it one of the leading firms of the world in the manufacture of surgical rubber.

Tuck was induced by a man named Sinclair,—who, having been a former employe of the Ingram company, knew of Tuck's ability,—to leave Ingram's and enter the service of another company, which proposed to enter upon the manufacture of surgical rubber and desired skilled men to assist them in that enterprise, and a part of the consideration offered Tuck was that he should receive a contract for two year's employment. After Tuck had been employed by the defendant company about six months he was summarily discharged, ostensibly for failing

to record all of his operations in detail. He sued to recover damages for violation of agreement, but lost his case because the court decided that his original agreement was modified and superseded by a later one, which abrogated the first agreement.

What is most interesting about this case to Americans is the price which the managers of the defendant company considered as equivalent for the trade-secrets which Tuck was to divulge to them; for informing the company as to very valuable processes, which Tuck had acquired while in the employ of Ingram's for sixteen years, and for his organizing the department for the manufacture of surgical rubber for the defendant company.

For these valuable services it might be expected that Tuck's compensation would be commensurate with the service expected of him, and it is surprising to read that the company considered the sum of £2.5s. per week (about \$10.89) as sufficient to pay him for his efficiency and skill.

If it is the free trade policy of England which fixes the compensation for such valuable service at this meagre price, the less we have of it in America the better for all workmen, if not for our whole people.

MAINE.

Bangor. Fred D. Wyman has removed from 81 to 171 Exchange St. into a much more commodious store, which is almost directly opposite the Bijou Theatre.

Houlton. Mr. W. H. Ormsby has been admitted to the firm known as the Cochran Drug Store.

Portland. The forty-sixth annual meeting of the Maine Pharmaceutical Association was held at Peak's Island on Wednesday, Thursday and Friday,—June 25-27,—and was a most successful occasion, due to the earnest work of the Committee on Entertainment, headed by President E. W. Murphy and the Committee on Transportation under the direction of Secretary, Dr. M. L. Porter.

Belfast. The name of the Diptherine Medicine Co. was changed to that of The Rogers Chemical Co. of Boston at a meeting held on June 2. The old board of officers was re-elected.

NEW HAMPSHIRE.

Franklin. The Griffin Drug Co. has been organized with a capitalization of \$12,000.

Manchester. Mr. Paul H. Boire, of Manchester, has been appointed a member of the

Board of Pharmacy to succeed Mr. A. S. Wetherell of Exeter. Mr. Boire has been connected with the profession in Manchester for twenty-eight years, beginning his experience in the store of which he is now the proprietor under the tutorship of Col. John B. Hall.

VERMONT.

Brandon. The annual meeting of the Vermont Association occurred at this place during the week of June 24. Professor Charles F. Nixon of Leominster was the special guest of the occasion and delivered an address at one of the sessions. Among the other visitors present was Prof. Elie H. La-Pierre of the Massachusetts College of Pharmacy, who made the meeting an objective point on an automobile tour through Western Massachusetts, New Hampshire and Vermont.

MASSACHUSETTS.

Boston. George R. White, Esq., the President of the Potter Drug and Chemical Co., has given \$30,000 to assist the work of the Gray Herbarium of Harvard College.

A seven-year-old child died on May 29 from eating tablets said to be put up under the name of Dr. Edward's Olive Tablets. The cause of death was stated by the authorities to be poisoning from strychnin and belladonna, although there is no mention of these toxic substances on the label of the preparation. The Medical Examiner will confer with the District Attorney as to the case and endeavor to prevent any repetition of it in this city.

William A. Chapin, Ph. G., formerly a prominent Boston druggist died on June 4 at his home in Natick, at the age of 57 years. Mr. Chapin formerly conducted a drug-store under the United States Hotel, and was at one time connected with Charles P. Jaynes in the management of the Jaynes Drug Co.

"Green, the Druggist, Inc.," have leased the store on the ground-floor and the basement of the building now in process of erection on the corner of Tremont Row and Howard Street. This firm now conducts stores in the cities of Springfield, Worcester and Holyoke, conducted on what is known as "the modern plan."

The Eastern Drug Co. base ball team displayed their new uniforms at their game on Saturday, June 14, and while it is accepted as an axiom that "the clothes don't make the man," yet the natty uniforms seemed to put

some "gimp" into the nine. They are not afraid to tackle the tail-enders of any old league.

At the annual meeting of the Massachusetts College of Pharmacy held on the second of June last, Messrs. Estabrook, Briry and Piper were elected as Trustees for a term of five years, and Prof. A. W. Balch was elected to succeed Mr. George E. Grover, resigned, for a period of two years. The report of the Treasurer and the Trustees of Invested Funds showed a most excellent condition of the college financially and the report of the Dean, Theodore J. Bradley, displayed an equally satisfactory condition on the educational side.

A most pleasant function took place in Malden, Mass., on the evening of June 4th when there occurred at the home of the bride's parents the wedding of Edith B. Pease and Robert Albro Newton, Ph. D., a former instructor of the M. C. P., and now an analytical chemist and druggist of Southboro and a Trustee of the College of Pharmacy. The bride and groom will be remembered by many who attended the A. Ph. A. meeting at Denver last year as members of the New England delegation. The ceremony was solemnized by the Rev. George Bullen, who, 31 years ago, married the bride's parents. Mrs. Newton was formerly the Dean's assistant at the College of Pharmacy and among those in attendance at the wedding were many of the Trustees and Faculty of that institution.

The meeting of the Massachusetts State Pharmaceutical Association was held at the Ocean House, Swampscott, during the week of June 24. The principal guest of the association was Mr. Thomas H. Potts, the Secretary of the N. A. R. D. A full report of the meeting will be given in our next issue.

Mr. Ernst O. Engstrom, former President of the Associated Boards of Pharmacy and a Trustee of the M. C. P., sailed from this port June 3, with Mrs. Engstrom, for an automobile tour of Europe. He will return to this country about the first of September, sailing from Naples, Italy.

Bridgewater. The H. H. Dudley & Co. corporation opened their new store in the Keith block on May 24. The equipment of the store is modern throughout. The firm being one of the members of the Druggists' Manufacturing Association will carry their lines of cigars and candy.

Chelsea. A woman named Lilian M. Lish has been before several of our courts for obtaining cocaine by means of forged prescriptions bearing the names of Lynn physicians. After being fined and admonished by several judges she has now received a sentence to the Woman's Prison for an indeterminate term in the hope that a rigid seclusion from temptation and opportunity may effect a cure in her morbid tendency for that drug.

Holyoke. Mr. and Mrs. L. G. Heinritz celebrated the silver anniversary of their wedding day on Friday, May 23 last, at their home on Washington Avenue, and were the recipients of many congratulations and gifts from their many friends. Mr. Heinritz is a Vice President of the American Druggists' Fire Insurance Co., but is best known among the trade as the Nestor of Western Massachusetts Pharmacy.

Leominster. Mr. Frank J. Pierson has been quite sick in the St. Vincent's Hospital at Worcester, Mass.

Lowell. Mr. Dennis A. O'Brien, for 36 years a druggist of this city, died on May 24. For many years he conducted a pharmacy in Centralville. He leaves a wife, two sons, one the Rev. Dennis O'Brien, recently ordained in Rome, and two daughters.

North Adams. The Wilson House Drug Store reopened its doors on May 24 for the first time since the fire of last July. The store is one of the finest in the western part of the state, one of its most ornamental features being a handsome fountain from the firm of Lippincott & Co. said to be the finest installed in New England this year.

Pittsfield. John Noonan has bought an interest in the Noonan drug-store and will become a junior partner in the firm of which P. H. Dineen is the senior member.

Salem. James E. Fitzgerald has purchased the store of the late Thomas B. Nichols and will consolidate his former store with the Nichols business at the stand of the latter.

Sheffield. George Scott opened a new drug-store in the Little Block during the week of May 26. The fixtures were the product of the well-known firm of Charles P. Whittle Manufacturing Co. of Boston. They are of quartered oak and glass.

Somerville. The store of the J. Arthur Bean Drug Co. was entered by thieves on the night of June 2 and about forty dollars' worth of goods was stolen. No clue has been obtained to the burglars.

Stoncham. William F. Gordon, a veteran druggist, who conducted a drug-store in Central Sq. for thirty-nine years, died on June 8, at the age of 74 years. He observed his golden-wedding last month.

Worcester. James F. Guerin and Peter B. Moriarty have been selected as delegates to the N. A. R. D. Convention at Cincinnati in August.

Mr. Tilsworth Bushnell and Miriam Howard were married on June 7 at the home of the bride's parents in Hyde Park. Mr. Bushnell is well-known as a drug-buyer for Brewer & Co. of this city.

CONNECTICUT.

Bridgeport. The Hindle Company of this city have installed one of the most complete soda-fountains of the American Soda Fountain Co. which that company have ever turned out. It is composed of marble and onyx, with a French beveled mirror sixteen feet long.

Hartford. The annual meeting of the Rexall Club of Rhode Island and Connecticut was held at the Hotel Garde on May 20, with thirty-five members in attendance.

The Sisson Drug Co. are to erect a four-story warehouse, extending ninety feet from the rear of their Main Street building.

The Alderman Drug Co. has leased the building on the corner of Main and Pearl Streets, now occupied by the Connecticut River Banking Co. The lease is for the term of ten years and the rental is \$8,500 a year.

Greenwich. An empty Blau gas-tank exploded in the rear of Finch's drug store on June 5 from exposure to the sun's rays, the clerk having forgotten to open its safety valve and let the pressure escape. Fortunately no one was in the locality at the time and no great damage was done.

New Haven. Mr. James Moran has purchased the interest of George Kenyon in the firm of Kenyon & Co. Messrs. Kenyon and Morgan have been associated in business for the past two years. Mr. Kenyon is soon to take up his residence in Tennessee.

MEN YOU WILL MEET IN NASHVILLE AT THE A. PH. A.

About the first familiar face you will see after arriving at Nashville will be the smiling countenance of the A. Ph. A.'s Local Secretary. That old war horse of the Association, Dr. J. O. Burge, who has been an active member in the ranks since 1879, and whose attendance at many of the annual meetings has caused him to have a wide acquaintance with druggists all over the U. S.

Dr. Burge ran a retail drug store in Bowling Green and later in Nashville for many years, was the first Secretary of the Tennessee Board of Pharmacy, was President of the Tennessee Pharmaceutical Association and now is manufacturing Chemist for the wholesale firm of Berry, Demoville & Co.

Dr. E. A. Ruddiman, Chairman of the General Arrangement Committee, will be "Johnny on the spot," and will give the glad hand to many of his old acquaintances whom he has met at the annual meetings. He has had a smile on his face ever since he heard that Nashville will be the host for the A. Ph. A. this year, and the closer it gets to August 18th the broader the smile gets. Dr. Ruddiman is Professor of Pharmacy and Materia Medica in the Pharmacy Department of Vanderbilt University and is Chemist in the U. S. pure food service.

Dr. J. T. McGill, Professor of Organic Chemistry at Vanderbilt, will be on hand and will be recognized by many of the visitors who have seen him in battle waged at the annual meetings in his efforts to unify pharmaceutical degrees, and to raise the requirement for entrance to schools of Pharmacy.

Mr. Charles S. Martin, ex-President of the National Wholesale Druggists' Association, whose genial manner and affable disposition has given him a popularity in drug circles that is nation wide, will be in prominence. Mr. Martin is manager of the wholesale drug firm of Spurlock Neal Co., and has a high regard for the members of the A. Ph. A. He is working like a Trojan to give them a royal southern welcome.

Mr. Clarence C. Young, chairman of the Druggists' Reception Committee, is a courteous, big-hearted enthusiast, who will handle his committee in such a manner that every member can count on his assistance from the

time they enter the depot until they leave the "City of Opportunity." He is a member of the up-to-date firm of Young & Thompson, corner Church and Eighth avenue north.

Mr. Jerome B. Sand, chairman of the Hotel Committee, will show the members what fine hotel arrangements his committee has been capable of making. Mr. Sand is a member of the Tennessee Board of Pharmacy and is a partner in the firm of Sand & Sumpter Drug Co., which operates a store in the Hermitage Hotel and one at the busy corner of Union and Fifth avenue N.

Major Ernest Hutton, one of the liveliest wires in the city, is the man who is chairman of the Finance Committee, which will secure ample funds to entertain the Association. Mr. Hutton is the proprietor of two prosperous retail stores in Northeast Nashville, and has served as a member of the Tennessee Board of Pharmacy and as president of the Tennessee Pharmaceutical Association.

Ira B. Clark will be very much in evidence. He is a splendid mixer and will leave no stone unturned to make the visiting members have a pleasant week here. As chairman of the Membership Committee he has caused a healthy growth of the A. Ph. A. here and over the South. He is secretary of the Tennessee Board of Pharmacy, and owns an up-to-now pharmacy at the corner of Fifth and Woodland streets.

One of the liveliest wires and finest workers that ever came down the pike is D. J. Kuhn. He is a great N. A. R. D. worker, having attended many of the annual meetings, and will give the glad hand to A. Ph. A. members here. He owns a very prosperous store at the corner of Cedar and McNairy streets.

S. C. Davis, who operates two stores in the city, is a prominent A. D. S. and N. A. R. D. worker and ex-president of the Tennessee Pharm. Association.

Will Phillips, who is showing great ability as manager of the old firm of Berry, Demoville & Co., will give the glad hand to all A. Ph. A. members.

Max Bloomstine, who runs a swell pharmacy on Church street, is a good druggist and a member of the A. Ph. A.

Among the many others there will be at the meetings: Gus Blodau, A. J. Martin, Dan Lencham, L. J. Pully, W. Y. Walldrum,

R. L. Eves, W. E. Harrison and Steve Moore, all owners of suburban stores.

The following traveling men will be on hand at this pharmaceutical love feast, and show the visitors what Chesterfields they have down here: V. A. Coleman, Harry Eskew, John Godwin, Earl Kemper, R. R. Phillips, A. A. Yeager, Abe Caruthers, Dr. Knott, J. W. Bass, Ed. Gilliland, Dr. J. R. McDaniels, Lucian Weakley, J. W. McMurry, John McGavock, Brice Hughes, Edwin Smith.

It is hardly necessary to add that the writer, in his capacity as chairman of the Entertainment Committee, will be ever present to cordially welcome all and to renew again the many acquaintances he has made at the several annual meetings he has attended and at the last Pharmacopoeial Convention in Washington.

WILLIAM R. WHITE, Ph. C.



MISSOURI'S NEW FOOD COMMISSIONER.

Frederick H. Fricke, who was recently appointed State Food and Drug Commissioner of Missouri, as announced in a late issue of *The American Food Journal*, is a native of St. Louis, and was born on April 1, 1873. He attended the public schools of the city, and subsequently the College of Pharmacy, where he graduated as a druggist. Mr. Fricke has a practical experience of the drug business and was President of the well-known firm of Fricke-Hahn Drug Company, which owned and operated over twenty drug stores in the city of St. Louis. During his twenty-five years' experience in the business he has mastered every detail of it, and is regarded as one of the most expert druggists in St. Louis.

He is a member of the American Pharmaceutical Association, Missouri Pharmaceutical Association, and the Retail Druggists' Association, and has been active in all of these bodies. In 1897 Mr. Fricke married Miss Willig, of Alhambra, Ill., and has one daughter. He has always taken a keen and

active interest in public affairs, both in civic and improvement associations.

A law was recently passed in the legislative assembly changing the office of the Pure Food and Drug Commissioner to St. Louis, and Mr. Fricke is now located in the La Salle building in that city. He is devoting himself with assiduity to mastering every detail of the business of the department, and is engaged in prosecuting a vigorous crusade against the sale of impure foods and drugs, demanding a thorough compliance with the provisions of the food and drug act. He has announced as part of his policy in managing the department that all persons liable to come within his jurisdiction will be given fair and courteous treatment, and so far as he can accomplish they will be informed of what the law requires them to do in the sale of food and drugs, so as to avoid the necessity of prosecution, except in cases where the circumstances imperatively demand it.

When asked as to his purposes and intentions in carrying out the details of the department, Mr. Fricke said, "I have accepted this appointment at the hands of Gov. Major, not because of the salary which is inadequate, having regard to the responsible duties attached to the position, but because I believe that this is one of the most important departments in the government of the state, and it can be made a valuable agency in promoting the health and welfare of the masses of the people. Before I accepted this appointment, I had studied pure food and drugs, and am glad to have the opportunity of carrying some of my ideas into effect. The pure food and drug business is still in its infancy—it has only passed its experimental stage, and there are many defects to be removed, and additions to be made to the law before the highest efficiency can be obtained in the administration of the affairs of the department. I expect to have some recommendations to make to the next legislature, but in the meantime will endeavor to give an administration of the affairs of the office which I hope will be satisfactory to the citizens of this state without reference to party affiliations." —*The American Food Journal*.

Report on the Progress of Pharmacy

For the Year 1912

(Thirteenth Installment.)

Iron Albuminate.—W. Gruning, of Riga, in an extensive paper, gives the chemistry, describes the official solutions, the position of the iron albuminate among the other official iron preparations, and ferrialbumin and ferrialbumin acid. For particulars the original paper must be consulted. The author lays special stress upon the fact that the Dieterich formula, using the dry egg albumin, produces a far superior and more stable material than the formula of the new German Pharmacopoeia, which employs 7.5 percent of fresh egg albumin instead of 3.5 percent of the dry albumin. He also finds that 75 parts of fresh egg albumin only represent 9 parts of dry albumin and that consequently the present solution of iron albuminate is weaker than the old one.—Ph. Zhalle, 1912, No. 44, 45. (O. R.)

Milk; Oxydases, Catalases and Reductases.—Dr. A. Splittgerber, of the Chemical Division of the Hygienic Institute of Dr. M. Neisser, Frankfurt, has made a detailed study of these agents and has reached the following conclusions:

I. The oxydases and peroxydases are present in variable quantities in the milk of different mammalia. Peroxydases can be determined in cow's milk which is not heated beyond 80° C. Arnold's reagent, that is tincture of guaiac, when fresh, is active without hydrogen peroxide. Storch's reagent, that is paraphenylenediamin and hydrogen peroxide, is not active in milk containing preservatives. Rothenfusser's reagent, consisting of an alcoholic solution of paraphenylenediaminchlorhydrate and guaiacol, when added to the lead acetate serum of milk in the presence of hydrogen peroxide, is so sensitive as to detect 1 part of raw milk in 1000 parts of boiled milk.

II. Catalases have the property of decomposing hydrogen peroxide into water and molecular oxygen, which latter can be collected and measured in a specially construct-

ed apparatus. The origin of catalases are still undetermined and are either caused by micro-organisms or enzymes.

III. Reductases have the property of decolorizing methylene blue, either with or without formaldehyde. For further particulars the original voluminous paper must be consulted.—Ph. Zhalle, 1912, 46-51. (O. R.)

Ointment of Colloidal Silver.—The proper preparation of Unguentum Argenti Colloidalis of the new German Pharmacopoeia has caused a great deal of discussion. R. Richter states that it is an entirely wrong procedure to pulverize the colloidal silver and then mix it with the ointment. It is highly important to add the same amount of distilled water as there is colloidal silver and leave the mixture standing in a mortar until it is spongy. The mixture is then thoroughly triturated and the ointment base added.—Ph. Zhalle, 1912, 46, 1305. (O. R.)

Soap Hand Paste.—The following formula is recommended:

Soft soap	80 parts
Ammonia water.....	5 parts
Pumice in powder.....	31 parts
Oil of Turpentine—a sufficient quantity to form a soft paste.	

This can be filled in boxes and also in collapsible tubes.—Ph. Zhalle, 1912, 46, 1312. (O. R.)

Cremulae, or Chocolate Creams.—Sir James Saroger has thus named medicinal chocolate creams. The "cream" is prepared by evaporating a mixture of sugar and milk to the consistency of paste. Different medicaments can be incorporated into this paste, which is covered with chocolate in the popular chocolate cream drop.—Ph. Zhalle, 1912, 50, 1427. (O. R.)

Benzin and Kerosene; Differentiation.—Prof. Dr. Holde and Dr. Ubbelohde, two authorities in petroleum chemistry, consider the flash point as the most important for the differentiation between benzin and kerosene.

Great confusion seems to exist, quite especially as of late a great many fractional distillates have come into the market. The authors consider that the product having a flash point above 21°C . should be named kerosene or petroleum.—Ph. Zhalle, 1912, No. 50, 1429. (O. R.)

Milk: Acidity.—Fresh milk has an alkaline reaction with helianthin and laemoid, an amphoteric reaction with lacmus and an acid reaction with phenolphthalein. F. Bordas and F. Touplain have shown that the acid reaction of milk when phenolphthalein is used as an indicator depends upon the free casein. The same authors have also proven that fresh milk does not contain any free acids, as lactic or citric acid, or any acid salts.—Annal. Falsific. 4, 1911, 297. (O. R.)

Pyrogallol: Oxidation by Hydrogen Peroxide.—If a mixture of 10 cc. of a 10 percent solution of pyrogallol and 20 cc. of a 40 percent solution of potassium carbonate and 10 cc. of a 35 percent solution of formaldehyde are added to 500 cc. of a 30 percent solution of hydrogen peroxide contained in a capacious vessel, the oxidation takes place so rapidly that flames are evolved.—Farm. Notisbl. 1912, Nr. 10. (O. R.)

Methyl Alcohol: Detection in Alcohol.—C. Nakai recommends the following: A mixture of 3 cc. of the liquid, 2.5 gm. ammonium persulphate and 8 cc. of a 20 percent sulphuric acid is diluted with water to 50 cc. and is then distilled. Five distillates of 5 cc. each are collected separately and two drops of Fuchsin-sulphuric acid are added and also 2 cc. of a solution of Stannostannic chloride. The more methyl alcohol present, the deeper will be the blue or violet blue color. With this test methyl alcohol can be detected if present 1 in 10,000.

The Fuchsin-sulphuric acid solution is prepared by mixing 50 cc. of a saturated sodium bisulphite solution with a solution of 1 gm. of Fuchsin in 1 Liter of water, acidified with 1 cc. of concentrated sulphuric acid.—Yakugakuzasshi, 1912, Nr. 361. (O. R.)

Albumin: History of the Reagents.—Beta-Naphthalene-sulphuric acid was proposed as a reagent by E. Riegler in Jassy, and is so sensitive as to detect one part of albumin in 40,000. Sulphosalicylic acid, or salicyl-sulphonic acid, was proposed by MacWilliam and detects as little as one part of albumin in 130,000 parts of urine. Sulphosalicylic

acid was discovered by Auguste Cahours in 1843 and further researches were made by O. Mendius in the chemical laboratory at the University of Göttingen. Since 1889 it has been manufactured on a large scale by Von Heyden. A test paper has also been introduced, but has been found to deteriorate. As a reagent for albumin in urine, it was introduced by MacWilliam and approved by Emil Fischer.—Ph. Zhalle, 1912, 1145. (O. R.)

Acetone-Alcohol.—According to *Merck's Annual Report* (1911), this is a mixture of 30 parts acetone and 70 parts alcohol 95 percent. It possesses highly disinfectant and antiseptic properties and is used for cleansing hands or wounds.—Ph. Zhalle, 1912, 1162. Editor's Comment: Great caution should be exercised when this mixture is called for by physicians or on prescriptions. It has been the habit of some druggists to label purified deodorized methyl alcohol as *Acetone Alcohol*, which, however, is a wrong name, as Columbian spirit, etc., is entirely free from acetone. This is another proof that methyl alcohol in any form should be labeled "Poison," and that it should not be mislabeled "Acetone Alcohol," which, according to the abstract, is an entirely different article. (O. R.)

Bismuth Soap: A New Cosmetic.—E. Wagner proposes the following method: A mixture of cacao butter and wool fat are heated to 50°C . and when cooled to 32°C . a solution of sodium hydroxide is added to it in a thin stream with constant stirring. The bismuth salt, either the subnitrate or subgallate, is then added, together with the necessary perfume and the entire mass is kneaded until it cools.—Ph. Zhalle, 1912, 50, 1429. (O. R.)

Insect Powder.—E. Juttner and P. Siedler, after a visit to Dalmatia and Montenegro, delivered several lectures before the Deutsche Pharmazeutische Gesellschaft in Berlin. The best insect powder is obtained from the closed flower heads of *chrysanthemum cinerariæfolium*, while the open flower heads produce a less valuable powder. The three chief adulterants of insect powder are stems, other similar flowers and coloring. The moisture, according to Dietz, is from 3.42 to 9.85 per cent. The ash content of the closed flowers seems to be more than that of the open flowers and varies, according to Dietze,

between 6.65 to 8.34. The extract content, according to Thoms, is 4 to 6 percent, according to Dietze, 4.35 to 7.72, and according to Caesar and Loretz, 6 to 9.5 percent. The paper is illustrated with microscopic slides of the powder from the flower heads and also that of the stems.—Ph. Zhalle. 1912. 50, 1431 to 1435. (O. R.)

German Pharmacopoeia: Comments.—Dr. A. Schneider and R. Richter have presented a very valuable contribution to pharmaceutical literature in their comments on the fifth edition of the German Pharmacopoeia, which were published in installments in the *Pharmazeutische centralhalle* during 1912. These comments have also been published as reprints, which are printed on one side of the paper only, and which can be used as a supplement to the Handkommentar and Schneider and Süss. (O. R.)

Rennin: Laboratory Studies Of.—In a study of the properties of rennin, prepared by different methods, A. Zimmerman states that rennin prepared by precipitation with sodium sulphate has a strength of 1:30,000 to 1:40,000 in 12 min., while that prepared with sodium chloride 1:150,000 to 1:200,000 in 12 min.

Scale rennin prepared with a strength of 1:30,000 to 1:40,000 is prepared by scaling the clarified solution of the whole rennets at a temperature not exceeding 110° F.

Commercial rennin comes in two forms: (1) Powdered, prepared from the Na Cl product and diluted with sugar of milk to test 1:30,000 to 1:40,000 in 12 min.; (2) Granular rennin, prepared from the scales and which tests the same as the powdered.

The permanency of the rennin in solution seems to be dependent upon phosphoric acid, which probably exists in the rennets as a calcium salt.

The addition of .075 percent of phosphoric acid to milk greatly increases the activity of the rennin, much more so than lactic, hydrochloric, or oxalic acids.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 508. (L. A. B.)

Alkaloids: Micro Chemical Identification of.—E. B. Putt states that morphine, codeine, dionin, atropine, cocaine, h. eucaine, nicotine, antipyrin, strychnine, and heroin form characteristic crystals when treated with either iodine, platinic chloride, or palladous chloride.

Putt's method of procedure is to transfer by means of a teasing needle, a small frag-

ment of the alkaloid to a perfectly clean glass slide, dissolve it in a drop of N/10 HCl, then add from a dropping bottle a drop of the appropriate reagent, then examine under microscope at once.

Photomicrographs are given showing characteristic forms of crystals.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 508. (L. A. B.)

Aromatic Sulphuric Acid: Improved Method of Assay for.—L. A. Brown states that the U. S. P. method for this preparation does not give reliable results, and gives an improved method for the assay of same.

A sample of about 10 gms. is diluted to 100 cc. with water, 10 cc. aliquots are titrated with N/10 KOH and phenolphthalein, which gives the "total acidity," due to free sulphuric and ethyl sulphuric acids.

The neutralized sample is then diluted to about 100 cc., heated to boiling and 2 cc. conc. hydrochloric acid added, followed by an excess of barium chloride.

From the amount of barium sulphate found is calculated the percent of "free sulphuric acid" and also the equivalent amount in cc. of N/10 H₂SO₄. This figure is subtracted from the "total acidity" and the difference multiplied by two, then calculated to percent of sulphuric acid as "combined sulphuric acid."

Total sulphuric equals "free" plus "combined sulphuric."

It was found that in the U. S. P. method all the ethyl sulphuric acid is not completely hydrolyzed by four hours' heating, and that even after eight hours' boiling, some remained undecomposed. Also that ethyl sulphuric acid is decomposed to a greater extent in concentrated solution than in dilute solution.

The formation of ethyl sulphuric acid in this preparation appears to be a time reaction and apparently comes to an equilibrium with 1 part of the acid as free sulphuric and 2 parts as ethyl sulphuric.—Journ. Ind. and Eng. Chem., July, 1912, Vol. 4, p. 512. (L. A. B.)

Camphor: Spirit of—Method of Assay.—A. T. Collins suggests that Spirit of Camphor may be accurately assayed by the following method:

Polarize in a 200 mm. tube, making correction for temperature, 1/2 mm. for each degree C., adding if above 20° C., deducting if below.

Place 50 cc. or more in evaporating dish and evaporate to dryness on water bath, stirring with glass rod at end to get camphor dry as possible. When quite dry place on watch glass, cover with small funnel and carefully sublime.

Dissolve 2.5 gms. of the sublimed camphor in sufficient alcohol to make 25 cc. and polarize as at first. This is called the "control."

The percentage is found by dividing the minutes of rotation of the control into the original reading, and then multiplying by 10.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 514. (L. A. B.)

Opium: Suggested Modifications in the Assay of.—Mr. R. Norris Shreve states that the U. S. P. method of assay for opium gives inaccurate results, due to (1) incomplete extraction of the opium, (2) retention of morphine by the mother liquor during precipitation, (3) inaccuracies in the lime water method for determination of the impurities in the precipitated morphine.

Shreve suggests that in view of the difficulty of extracting opium by the U. S. P. method (only about 2/3 of the morphine present being removed by gentle mechanical shaking for 8 hours, on three out of four samples) that a test for the completeness of extraction be given in the U. S. P.

It was found that considerable morphine is retained by the mother liquor in the U. S. P. method, and a table is given showing the amount retained at different temperatures. It was also found that the extractive matter in the mother liquor serves to hold back more morphine than is represented by the solvent action of the solvents themselves.

It is suggested that the purity of the crude morphine be determined by the Mallinckrodt re-assay method.—*Journ. Ind. & Eng. Chem.*, July, 1912, Vol. 4, p. 514. (L. A. B.)

Papain: Determination of the Digestive Value of.—J. R. Rippetoe submits the following method as a means of determining the digestive power of papain.

Prepare egg albumen as directed under pepsin assay U. S. P. 8th revision. Introduce into a 4-ounce wide-mouth flint bottle 40 cc. of a 0.1 percent sodium hydroxide solution and add 10 grams of the disintegrated albumen; stopper the bottle and shake vigorously until the albumen is broken up.

Then add the papain in fine powder and mix by shaking 15 seconds. Place the bottle in a water bath previously heated to 52° C.

and digest at this temperature for 6 hours, removing bottle every 10 minutes and shaking gently for 15 seconds. At the end of this period, transfer the mixture to a 100 cc. grad. stoppered cylinder, rinse the bottle with water, add rinsings to the mixture and make the volume up to 70 cc. with water.

Allow to stand for one hour, then read off volume of the desopit, take second reading after standing 16-18 hours, which seems to give more positive results.

It was found that some digestion took place in 0.1% HCl but that 0.2 or 0.3% HCl inhibits the action.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 517. (L. A. B.)

Formic Acid: The Detection of in Fruit Products.—F. L. Shannon, in commenting upon the use of formic acid as a preservative of fruit products, suggests the following method of procedure as a means of detecting formic acid in such products.

Place 200-500 cc. of the syrup or crushed fruit in a two liter, long-necked, round-bottom flask, provided with a Reitmeier bulb, add 50-100 cc. water, and distill over by means of steam, about 2500 cc. distillate, or until distillate ceases to react acid to litmus. Neutralize the distillate with N 1 NaOH, using litmus as an indicator. Evaporate to about 50 cc. and transfer to an Erlenmeyer flask, provided with a reflux condenser, add a few pieces of pure magnesium wire and a slight excess of dilute sulphuric acid and set in a cool place for one hour, adding more sulphuric acid if necessary.

Transfer liquid to suitable distilling flask, and collect the first ten cc. of the distillate and apply tests for formaldehyde.

As an additional means of detection, it is recommended that the lead salt of formic acid be formed and isolated and subjected to appropriate tests for identification.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 526. (L. A. B.)

Prussian Blue in Tea: The Detection of.—Fred West submits the following test as a means of detecting Prussian Blue in tea:

Grind about 15 gms. of the tea in a mortar until it passes through a No. 20 sieve.

Place thin, smooth filter papers, 11 cm. in diameter, on glass plates and moisten each filter paper with solution oxalic acid, removing any air bubbles from under paper.

Sprinkle the ground tea leaves over the filter papers, being careful not to sift the tea so thickly that the particles of tea will

lap. Allow the filters to dry on the plates in the air, brush off the particles of tea leaves with a stiff brush, when, if the tea be colored with Prussian Blue, it will be indicated by bright blue spots upon the filter.—*Journ. Ind. and Eng. Chem.*, July, 1912, Vol. 4, p. 528. (L. A. B.)

Phenol: Rapid and Accurate Methods for Determining.—L. V. Redman and E. O. Rhodes have made a study of the bromide-bromate and the hypobromite methods for the determination of phenol, endeavoring to shorten the time required for the assay and comparing the hypobromite method with the bromide-bromate method for accuracy, ease of manipulation, and time required for the determination.

As a result of their work they state that both methods are capable of reaching an accuracy of only 0.3% error, and that the reaction period may be reduced from 30 minutes to 1 minute of continuous shaking, after adding the bromine, without sacrificing accuracy.

However, it is necessary to shake for at least 3 minutes after adding the KI solution, otherwise an error of 0.5%, due to this cause alone, will occur.

The bromide-bromate solution was found to be much more stable than the hypobromite solution, and is also free from the odor of bromine.—*Journ. Ind. and Eng. Chem.*, Sept., 1912, Vol. 4, p. 655. (L. A. B.)

Vanillin: Difficulties in the Colorimetric Estimation of.—W. S. Hubbard states that the A. O. A. C. method for the colorimetric method of determining vanillin does not give satisfactory results.

He finds that there is a loss of vanillin when lead cream is used as a clarifying agent, a portion of the vanillin being carried down as a lead salt of the composition of $(C_8H_7O_2)_2 Pb$.

A more intense color is formed if the ferrous sulphate be added, as given in the original method of Moerk's, instead of the bromine water.—*Journ. Ind. and Eng. Chem.*, Sept., 1912, Vol. 4, p. 669. (L. A. B.)

Vanillin: A New Colorimetric Method for the Determination of—in Flavoring Extracts.—Otto Folin and W. Denis have proposed the following method for the colorimetric determination of vanillin in flavoring extracts:

Transfer 5.0 cc. of the sample to a 100 cc. flask and add 75 cc. water, then add 4 cc. of

the lead acetate solution and sufficient water to make 100 cc.

The contents of the flask are rapidly filtered and 5 cc. of filtrate placed in a 50 cc. flask, then add 5 cc. of the phosphotungstic-phosphomolybdic reagent, shake, and allow to stand for 5 minutes, then fill to the mark with a saturated sodium carbonate solution. Invert the flask 2 or 3 times, allow to stand for 10 minutes for any precipitate to settle, then filter rapidly and compare the deep blue solution with a standard solution, prepared in like manner, in a Du Bosc colorimeter.

The reagents required are (1) an aqueous solution of pure vanillin, containing in each 10 cc., 1 mg. of vanillin; (2) the phosphotungstic-phosphomolybdic acid reagent, prepared by heating 100 gm. sodium tungstate, 20 gms. phosphomolybdic acid, or molybdic acid (free from ammonia or nitrates), 100 gms. 85% phosphoric acid, and 700 cc. water, and boiling over free flame for one and one-half hours, cool, filter, and make up to 1 liter; (3) a solution of sodium carbonate saturated at room temperature.

Care should be exercised to see that the intensity of color in the standard and sample to be read is approximately the same, also in setting up colorimeter to see that the illumination of both fields is the same, so that comparisons of the standard can be made within at least 0.2 mm.

It is essential that both solutions shall be perfectly clear, otherwise erroneous results will be obtained. The results of several analyses show good comparisons with the more laborious gravimetric official method.—*Journ. Ind. and Eng. Chem.*, Sept., 1912, Vol. 4, p. 670. (L. A. B.)

Benzoic Acid as an Acidimetric Standard.—Geo. W. Morey states that benzoic acid possesses many advantages as a standard in acidimetry, in that its high molecular weight permits of the use of large samples, thus reducing the error of weighing; its stability and lack of hygroscopicity make its use very convenient; the ease of obtaining it in a high state of purity and the simplicity and rapidity of the method make it an excellent material to use as a standard in acidimetry and alkalimetry.

The benzoic acid was purified by recrystallizing twice from alcohol, once from water, and then fractionally subliming in vacuo.

Because of the bulkiness of the sublimed

benzoic acid, its bulk was condensed by placing it in a covered platinum dish and melting by placing in an oven heated to 140° C. When melted, the liquid was poured into a test tube, allowed to solidify, and the stick so obtained broken into pieces of convenient size, and preserved in a glass-stoppered bottle.

To use as a standard, weigh out about 1 gm. of this material, place in a 300 cc. flask, add 20 cc. alcohol, and allow to dissolve. Add three drops of a 1% solution phenol phthalein and titrate with N/10 alkali, and CO₂ being removed from the flask by means of a current of CO₂ free air.

A 7% transformation of the indicator was the end point selected, the effect of the alcohol on the end point being determined by means of a blank experiment.

The results obtained by the above method compared very closely with that obtained by means of standard hydrochloric acids prepared by the distillation method of Hulett & Bonner, the gravimetric silver chloride method, and standard sulphuric acid, standardized gravimetrically by the barium sulphate method, and by the sodium oxalate method.—*Journ. Am. Chem. Soc.*, August, 1912, Vol. 34, p. 1027. (L. A. B.)

Weights and Measures Should Be Guaranteed U. S. P. Standard.—Joseph W. England says that "there is probably no more important need in the pharmaceutical world than the necessity of having accurate and uniform weights and measures, especially measures of volume. It is simply idle to standardize the more potent remedies of the Pharmacopoeia, with the greatest possible degree of accuracy, and then measure them with measures that are not accurately graduated."

In a test of thirty-six eight-ounce graduates of different makers it was found that

- 1 That not one of the measures were accurately graduated.
- 2 Some were better than others, but that all were bad.
- 3 On one graduate the six fl. ounce mark was correct only.
- 4 On twelve graduates the four drachm mark was the correct measure of six fluid drachms, a variation from the standard of 50 percent.

The standard used in testing these graduates was one fluid ounce=29.5161 grammes of water, weighed in dry air at a tempera-

ture of 15° C., barometric pressure of 760 mm., the coefficient of expansion of the glass being assumed to be 0.000025 and the density of the brass weights .83, these figures being derived from the original data in use at the National Bureau of Standards of the U. S. at Washington, D. C.

Graduates should be held in a perfectly level position when measuring, with careful observation of the lower meniscus. The narrow cylinder shaped graduates yield more accurate results than the cone-shaped graduates. The use of graduated prescription bottles should be discouraged because they vary greatly in accuracy. The American-made graduates, in accuracy and appearance are superior to those of foreign make and are more likely to be in accord with U. S. P. standards.

He recommends that all graduates should be required to be guaranteed by the manufacturer and should be marked "Guaranteed U. S. P. Standard by ———," and that pharmacists should purchase no goods not so marked, for use in pharmaceutical measurements of volume.—*Proc. Penn. Phar. Asso.*, 1912, pp. 118-120. (E. C. M.)

Saturated Solutions, Proper Method of Making.—J. Leon Lascoff, of New York, gives the following reasons for the delinquencies of pharmacists in the making of true saturated solutions of chemicals, particularly the iodides and bromides:

1. Impurity of the salts, especially the iodides.
2. The careless methods followed in manipulation.
3. Incorrect weights and measures.
4. Working at the wrong temperature.
5. The use of containers of the wrong size.

The most accurate way of making saturated solutions is by weighing both water and the salt, shaking until dissolved and straining. He gives the following table as being approximately correct as to the amount of each salt which is required to make a fluid ounce of a saturated solution at 25° C.

	Grams to make 100 cc.	Grains to make one fl. oz.
Potassii Iodidum.....	99.6	456
Sodii Iodidum.....	127.5	584.3
Strontii Iodidum.....	114.9	526
Potassii Bromidum....	50.4	230
Sodii Bromidum.....	72.09	329
Magnesi Sulphas.....	56.32	260
Potassii Chloras.....	5.69	26

—*Proc. N. Y. Phar. Assoc.*, 1912, pp. 320-321. E. C. M.

Antidotes, Suggested Official Table of.—Otto Raubenheimer suggests that a Table of Antidotes, similar to that of the Netherlands Pharmacopœia, should be added to the United States Pharmacopœia.—Proc. N. Y. Phar. Assoc., 1912, p. 324. (E. C. M.)

Chloroform, Quantitative Estimation of, in Chloroform Liniment.—Joseph L. Mayer, New York, reviews the different methods for the estimation of Chloroform in chloroform liniment, finds them lacking and suggests the following as a convenient and satisfactory process for the determination of the chloroform content: Into a test-tube having a capacity of about 85 cc. and about 25 mm. in diameter, place 10 cc. of distilled water and 10 cc. of liniment to be analyzed, accurately measured with a pipette; to prevent bumping a small piece of pumice-stone, which has previously been heated to a white-heat and thrown into water, is added. The test-tube is connected with a Liebig condenser by means of corks and bent tubes. For a receiver use an accurate 25 cc. cylinder graduated in tenths or fifths of a cc. containing five cc. diluted water. It is not necessary to have the condenser-tube come in contact with the water. All that is required is to have it project into the cylinder. By means of a naked flame, quietly distill the chloroform into the water contained in the cylinder. It is easy to know when the chloroform is all distilled by watching the receiving cylinder. As the chloroform distills it sinks to the bottom, then comes a lighter distillate which remains on top and is perfectly clear and then a distillate which forms a milky layer occupying about 1 cc.; after this turbid zone has appeared remove cylinder; stopper it with a sound cork and mix by shaking thoroughly. Then remove the cork and add diluted sulphuric acid (10%) to the 25 cc. mark and shake thoroughly. In a few moments the chloroform will have settled to the bottom in a clear layer and all that remains is to multiply the cc. of chloroform by 10 to obtain the percentage of chloroform in the sample. The entire examination does not require over fifteen minutes.—Proc. N. Y. State Phar. Assoc., pp. 295-296. (E. C. M.)

Formaldehyde, Methods of Assay.—Claude E. Hill of Austin has made a comparative examination of the different modes of assaying formaldehyde and concludes that of the

four methods tried that the cyanide method gives the best results. The objection to the U. S. P. method of assay is that other aldehydes interfere with the correct estimation of formaldehyde and that it cannot be used for solutions of less strength than five percent, but he says it is very adaptable to strong solutions. The objection to the ammonia method is the volatility of the ammonia, and the iodometric method, like that of the U. S. P., is not of service in the presence of other aldehydes. The cyanide method gives accurate results in the presence of other aldehydes or oxidizing agents; and works equally well in dilute or strong solutions, for in using this method strong solutions are diluted. This process is based on the Vohlard Thiocyanate method, which is very accurate.—Proc. Texas. Phar. Assoc., 1912, pp. 85-87. (E. C. M.)

Syrup Ammonii Hypophosphitis.—In a paper entitled "Some Criticism and Comments on the Proposed N. F. Formulas," Dr. P. E. Hommell says that the addition of Compound Spirit of Vanillin to this syrup is apt to make it sickening to susceptible patients and that it is a very acceptable preparation without this addition and further remarks that unless drugs are very bitter, nauseous or acrid, flavoring, sweetening or coloring to the degree found in the N. F. preparations are entirely unnecessary.—Proc. N. J. Phar. Assoc., 1912, pp. 90-96. (E. C. M.)

Quinine, Aromatic Syrup of.—Dr. P. E. Hommell criticizes the enormous waste of Quinine as administered in pill or tablet form, and recommends the following as a most eligible preparation for its administration after an experience of many years with it in his own practice:

Quinine sulphate, one drachm.
Hydrobromic acid dilute q. s. to dissolve.
Tinct. cardamom. co.
Amise water of each, four fl. drams.
Simple syrup to make four fl. ounces.

The use of hydrobromic acid tends to overcome some of the untoward action of the quinine, such as headache, giddiness and tinnitus aurium, with not infrequent impairment of hearing and of sight, and he has never observed, following its use, any cutaneous eruptions which are often the sequelæ of the administration of quinine in concentrated form.—Proc. N. J. Phar. Assoc., 1912, pp. 96-97. (E. C. M.)

Opium Deodoratum.—William K. Ilhardt, St. Louis, says that in preparing deodorized opium, ether dissolves more coloring matter and resins than benzin. Benzin dissolved 8.6 to 9.5% while the ether-soluble matter amounted to 12%. A preliminary test of the ether extract showed but a small amount of morphine present. Attempts to determine the loss of morphine by assay before and after its deodorization were not satisfactory. The averages of two lots are as follows:

Sample A assayed 12.1% before, 13.4% after.

Sample B assayed 12.6% before, 12.84% after.

The relative value of ether and benzin should be thoroughly studied, and should ether be found to dissolve too much of the desirable constituents of the opium and benzin less, then the use of the latter should be continued, on the other hand ether appears preferable since it removes more matter than benzin.—Proc. Missouri Phar. Assoc., 1912, 113-114. (E. C. M.)

Sterilization in the Pharmacy.—Commenting upon the proposition that Methods of Sterilization may be introduced into the new Editions of the U. S. P. and N. F., E. Fullerton Cook, Ph. D., describes the equipment required by the pharmacist to dispense sterile solutions and the methods of their preparation. While these methods do not cover the whole field of sterilization by the pharmacist they are offered as suggestions and with the hope that pharmacists generally may be encouraged to prepare for this largely-increasing demand upon their skill.—Proc. N. J. Phar. Assoc., 1912, pp. 74-77. (E. C. M.)

Mistura Rhei et Sodae, Improved Formula for.—Adolph P. Marquier suggests a change in the formula for Rhubarb and Soda Mixture, the present formula, in his opinion, containing too much glycerin and too much spirit of peppermint. He suggests the following as an improved formula for this preparation:

Sodium Bicarbonate.....	35 grams
Potassium Carbonate.....	3 grams
Fl. Ext. Rhubarb.....	15 cc.
Fl. Ext. Ipecac.....	3 cc.
Spt. Peppermint.....	15 cc.
Alcohol	100 cc.
Glycerin	250 cc.
Water, sufficient to make....	1000 cc.

Dissolve the sodium and potassium salts in 500 cc. of water. Add the fluidextracts to the glycerin and alcohol and spirit of peppermint and enough water to make 500 cc. Add this to the above solution and allow it to stand twenty-four hours and filter.—Proc. New Jersey Phar. Assoc., 1912, p. 72. (E. C. M.)

Blaud's Pills, Permanency of.—Charles H. LaWall from an analysis of some carbonate of iron pills said to be at least forty years old, says that the results show that for permanence these pills when properly made are in the highest possible class.—Proc. N. J. Phar. Assoc., 112, pp. 73-74. (E. C. M.)



BELLES LETTRES AND SANITARY SCIENCE.

An example of how the youth of Indiana combine the pursuit of literature and sanitary science is seen in the accompanying verses, entitled "How It Happened," reprinted from the *Bulletin* issued by the Board of Health of that State, and said to be the product of a Short Ridge High School student.

A fly and a flea,
A mosquito and a louse,
All lived together
In a very dirty house.
The louse spread the ague,
The 'skeeter spread the chills,
And they all worked together
For undertaker's bills.

The fly spread typhoid,
And the flea spread typhus, too,
And the people in the house
Were a mighty dirty crew
Along came a man
And he cleaned up the house.
He screened out the 'skeeter
And swatted the louse;
The fly and the flea
He smacked on the wall,
And now the people in the house
Are never sick at all.

D. WHITE

The Pharmacist and the Law

PATENTEE CANNOT RESTRICT RE-SALE PRICES.

United States Supreme Court in Sanatogen Case, Denies Application of Patent Statute to Sale by Retailer Below Specified Price—Passage of Full Title Left Complainant Remediless—Case Analogous to Book Copyright Decision—Dick Mimeograph Decision Distinguished—Four Justices Dissent.

(Reprinted from the Oil, Paint and Drug Reporter, June 2, 1913.)

The following is the full text of the opinion of the United States Supreme Court in the case of the Bauer Chemical Company against James O'Donnell, a druggist, of Washington, D. C., denying the right of the complainant to control the retail sale price of sanatogen, a patent medicine, as specified on the package. The decision of the court was by five against four. Justices White, Day, Hughes, Lamar and Pitney concurring in the prevailing opinion, and Justices McKenna, Holmes, Lurton and Van Devanter dissenting. The decision was rendered May 26, 1913, by Mr. Justice Day, the case bearing the record number of 951, October, 1912, term of the United States Supreme Court:

THE PREVAILING OPINION.

This case is on a certificate from the Court of Appeals of the District of Columbia. The facts stated in the certificate are:

"Bauer & Cie., of Berlin, Germany, co-partners, being the assignees of letters patent of the United States, dated April 5, 1898, No. 601,995, covering a certain water soluble albumenoid known as 'Sanatogen' and the process of manufacturing the same, about July, 1907, entered into an agreement with F. W. Hehmeyer, doing business in the city of New York under the trade name of The Bauer Chemical Company, whereby Hehmeyer became and has since been the sole agent and licensee for the sale of said product in the United States, the agreement contemplating that Hehmeyer should have power to fix the price of sale to wholesalers or distributors and to retailers and to the public. The agreement further contemplated that said product should be furnished by Hehmeyer at manufacturing cost, the net profits obtained by him to be shared equally by the parties to the agreement. Since April,

1910, this product has been uniformly sold and supplied to the trade and to the public by the appellants and their licensees in sealed packages bearing the name 'Sanatogen,' the words 'Patented in U. S. A., No. 601,995,' and the following:

"'Notice to the Retailer.

"'This size package of Sanatogen is licensed by us for sale and use at a price not less than one dollar (\$1.00). Any sale in violation of this condition, or use when so sold, will constitute an infringement of our patent No. 601,995, under which Sanatogen is manufactured, and all persons so selling or using packages or contents will be liable to injunction and damages.

"'A purchase is an acceptance of this condition. All rights revert to the undersigned in the event of violation.

"'The Bauer Chemical Co.'

"The appellee is the proprietor of a retail drug store at 904 F street, N. W., in this city. He purchased of the Bauer Chemical Company for his retail trade original packages of said Sanatogen bearing the aforesaid notice. These packages he sold at retail at less than one dollar and, persisting in such sales, appellants in March, 1911, severed relations with him. Thereupon appellee, without the license or consent of the appellants, purchased from jobbers within the District of Columbia, said jobbers having purchased from appellants, original packages of said product bearing the aforesaid notice, sold said packages at retail at less than the price fixed in said notice, and avers that he will continue such sales."

The question propounded is: "Did the acts of the appellee, in retailing at less than the price fixed in said notice, original packages of 'Sanatogen' purchased of jobbers as aforesaid, constitute infringement of appellants' patent?"

The protection given to inventors and authors in the United States originated in the Constitution, Section 8 of Article I of which authorizes the Congress "to promote the progress of science and useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." This protection, so far as inventors are concerned, has been conferred by an act of Congress passed April 10, 1790, and subsequent acts and amendments. The act of 1790 (1 Stat. 109) granted "the sole and exclusive right and liberty of making, constructing, using and vending to others to be used, the said invention or discovery." In 1793 (1 Stat. 318) the word "full" was substituted for the word "sole," and in 1836 (5 Stat. 117, §5) the word "constructing" was omitted. This

legislation culminated in Section 4884 of the Revised Statutes, the part with which we are dealing being practically identical with the act of 1870 (16 Stat. 198, § 22). It provides that every patent shall contain "a grant to the patentee, his heirs and assigns, for the term of seventeen years, of the exclusive right to make, use and vend the invention or discovery."

The right to make, use and sell an invented article is not derived from the patent law. This right existed before and without the passage of the law and was always the right of an inventor. The act secured to the inventor the exclusive right to make, use and vend the thing patented, and consequently to prevent others from exercising like privileges without the consent of the patentee. *Bloomer vs. McQuewan*, 14 How. 539, 549; *Continental Paper Bag Company vs. Eastern Paper Bag Company*, 210 U. S. 405, 425. It was passed for the purpose of encouraging useful invention and promoting new and useful improvements by the protection and stimulation thereby given to inventive genius, and was intended to secure to the public, after the lapse of the exclusive privileges granted, the benefit of such inventions and improvements. With these beneficent purposes in view the act of Congress should be fairly or even liberally construed; yet, while this principle is generally recognized, care should be taken not to extend by judicial construction the rights and privileges which it was the purpose of Congress to bestow.

ANALOGY BETWEEN PATENT AND COPYRIGHT STATUTES.

In framing the act and defining the extent of the rights and privileges secured to a patentee Congress did not use technical or occult phrases, but in simple terms gave an inventor the exclusive right to make, use and vend his invention for a definite term of years. The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented. The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention. And Congress did not stop with the express grant of the rights to make and to use. Recognizing that many inventions would be valuable to the inventor because of sales of the patented machine or device to others, it granted also

the exclusive right to vend the invention covered by the letters patent. To vend is also a term readily understood and of no doubtful import. Its use in the statute secured to the inventor the exclusive right to transfer the title for a consideration to others. In the exclusive rights to make, use and vend, fairly construed, with a view to making the purpose of Congress effectual, reside the extent of the patent monopoly under the statutes of the United States. *Bloomer vs. McQuewan*, supra, 549. We need not now stop to consider the rights to sell and convey, and to license others to sell or use inventions, which rights have been the subject of consideration in the numerous reported cases to be found in the books. We are here concerned with the construction of the statute in the aspect and under the facts now presented.

The case presented pertains to goods purchased by jobbers within the District of Columbia and sold to the appellee at prices not stated, and resold by him at retail at less than the price of \$1 fixed in the notice. The question, therefore, now before this court for judicial determination is, may a patentee by notice limit the price at which future retail sales of the patented article may be made, such article being in the hands of a retailer by purchase from a jobber who has paid to the agent of the patentee the full price asked for the article sold?

The object of the notice is said to be to effectually maintain prices and to prevent ruinous competition by the cutting of prices in sales of the patented article. That such purpose could not be accomplished by agreements concerning articles not protected by the patent monopoly was settled by this court in the case of *Dr. Miles Medical Company vs. Park & Sons Co.*, 220 U. S. 373, in which it was held that an attempt to thus fix the price of an article of general use would be against public policy and void. It was doubtless within the power of Congress to confer such right of restriction upon a patentee. Has it done so? The question has not been determined in any previous case in this court so far as we are aware. It was dealt with under the copyright statute, however, in the case of *Robbs-Merrill Company vs. Straus*, 210 U. S. 339. In that case it was undertaken to limit the price of copyrighted books for sale at retail by a notice on each book fixing the price at \$1 and stating that

no dealer was licensed to sell it for less, and that a sale at a less price would be treated as an infringement of the copyright. It was there held that the statute, in securing to the holder of the copyright the sole right to vend copies of the book, conferred a privilege which, when the book was sold, was exercised by the holder, and that the right secured by the statute was thereby exhausted. The court also held that it was not the purpose of the law to grant the further right to qualify the title of future purchasers by means of the printed notice affixed to the book, and that to give such right would extend the statute beyond its fair meaning and secure privileges not intended to be covered by the act of Congress. In that case it was recognized that there are differences between the copyright statute and the patent statute, and the purpose to decide the question now before us was expressly disclaimed.

Sec. 4952, Revised Statutes, a part of the copyright act, secures to an author, inventor, designer or proprietor of books, maps, charts or dramatic or musical compositions the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing and vending them. While that statute differs from the patent statute in terms and in the subject matter intended to be protected, it is apparent that in the respect involved in the present inquiry there is a strong similarity between and identity of purpose in the two statutes. In the case of patents the exclusive right to vend the invention or discovery is added to the like right to make and use the subject matter of the grant, and in the case of copyrights the sole right of multiplying and reproducing books and other compositions is coupled with the similar right of "vending the same." So far as the use of the terms "vend" and "vending" is concerned, the protection intended to be secured is substantially identical. The sale of a patented article is not essentially different from the sale of a book. In each case to vend is to part with the thing for a consideration. It is insisted that the purpose to be subserved by notices such as are now under consideration—keeping up prices and preventing competition—is more essential to the protection of patented inventions than of copyrighted articles; and it is said that the copyrighted article may be and usually is sold for a lump consideration by the author or composer and that he has no interest in

the subsequent sales of the work, while patented inventions require large outlays to create and maintain a market. To some extent this contention may be based upon fact; nevertheless it is well known that in many instances the compensation an author receives is the royalties upon sales of his book, or a percentage of profits, which makes it desirable that he shall have the protection of devices intended to keep up the market and prevent the cutting of prices. But these considerations could have had little weight in framing the acts. In providing for grants of exclusive rights and privileges to inventors and authors we think Congress had no intention to use the term "vend" in one sense in the patent act and "vending" in another in the copyright law. Protection in the exclusive right to sell is aimed at in both instances, and the terms used in the statutes are to all intents the same.

It is apparent that the principal difference in the enactments lies in the presence of the word "use" in the patent statute and its absence in the copyright law. An inventor has not only the exclusive right to make and vend his invention or discovery, but he has the like right to use it, and when a case comes fairly within the grant of the right to use, that use should be protected by all means properly within the scope of the statute. In *Bement vs. National Harrow Company*, 186 U. S. 70, the owner of a patent granted a license to the defendant to manufacture and sell harrows embodied in the invention covered by the patent. The license provided for the payment to the licensor by the licensee of a royalty of \$1 for each harrow or frame sold and stipulated that the licensee was not to sell to any person for a less price than that named, and that the license was subject to change from time to time. The case was one arising upon license agreements, originating in a state court, and did not involve the construction of the patent act in the circumstances now disclosed.

DISTINGUISHING FEATURES OF DICK MIMEOGRAPH CASE.

Chief reliance, however of the plaintiff in this case is upon the recent decision of this court in *Henry vs. Dick Company*, 224 U. S. 1. An examination of the opinion in that case shows that the restriction was sustained because of the right to use the

machine granted in the patent statute, distinguishing in that respect the patent from the copyright act. In that case a patented mimeograph had been sold which bore an inscription in the form of a notice that the machine was sold with the license restriction that it might only be used with stencil, ink and other supplies made by the A. B. Dick Company, the owners of the patent. The alleged infringer sold to the purchaser of the mimeograph a can of ink suitable for use with the machine with full knowledge of the restriction and with the expectation that the ink sold would be used in connection with the machine. It is expressly stated in the opinion that the machine was sold at cost or less and that the patentee depended upon the profit realized from the sale of the non-patented articles to be used with the machine for the profit which he expected to realize from his invention (224 U. S. 26). After commenting upon the copyright statutes and the resemblance between the author's right to vend copies of his work and the patentee's right to vend the patented thing, it was said (p. 46):

"To the inventor, by Sec. 4884, Revised Statutes, there is granted 'the exclusive right to make, use and vend the invention or discovery.' This grant, as defined in *Bloomer vs. McQuewan*, 14 How. 539, 549, 'consists altogether in the right to exclude every one from making, using or vending the thing patented.' Thus, there are several substantive rights, and each is the subject of subdivision, so that one person may be permitted to make, but neither to sell nor use the patented thing. To another may be conveyed the right to sell, but within a limited area, or for a particular use, while to another the patentee may grant only the right to make and use, or to use only for specific purposes. *Adams vs. Burke*, 17 Wall. 453; *Mitchell vs. Hawley*, 16 Wall. 514; *Rubber Company vs. Goodyear*, 9 Wall. 788, 799." (Italics in the original opinion.)

That case was distinguished from *Bobbs-Merrill vs. Straus*, *supra*, construing the copyright act, because of the difference in the terms of the copyright and patent statutes, the patent act conferring not only the right to make and sell, but the exclusive right to use the subject matter of the patent. It was under the right to use that the license notice in question was sustained, and it is obvious that the notice in that case dealt with the use of the machine and limited it to use only with the paper, ink, and supplies of the manufacture of the patentee.

While the title was transferred, it was a qualified title, giving a right to use the machine only with certain specified supplies. It was said in the *Dick* case that "there is no collision between the decision in the *Bobbs-Merrill* case and the present opinion. Each rests upon a construction of the applicable statute, and the special facts of the cases."

It is contended in argument that the notice in this case deals with the use of the invention, because the notice states that the package is licensed "for sale and use at a price not less than one dollar," that a purchase is an acceptance of the conditions, and that all rights revert to the patentee in event of violation of the restriction. But in view of the facts certified in this case, as to what took place concerning the article in question, it is a perversion of terms to call the transaction in any sense a license to use the invention. The jobber from whom the appellee purchased had previously bought, at a price which must be deemed to have been satisfactory, the packages of sanatonogen afterwards sold to the appellee. The patentee had no interest in the proceeds of the subsequent sales, no right to any royalty thereon or to participation in the profits thereof. The packages were sold with as full and complete title as any article could have when sold in the open market, excepting only the attempt to limit the sale or use when sold for not less than one dollar. In other words, the title transferred was full and complete with an attempt to reserve the right to fix the price at which subsequent sales could be made. There is no showing of a qualified sale for less than value for limited use with other articles only, as was shown in the *Dick* case. There was no transfer of a limited right to use this invention, and to call the sale a license to use is a mere play upon words.

The real question is whether in the exclusive right secured by statute to "vend" a patented article there is included the right, by notice, to dictate the price at which subsequent sales of the article may be made. The patentee relies solely upon the notice quoted to control future prices in the resale by a purchaser of an article said to be of great utility and highly desirable for general use. The appellee and the jobbers from whom he purchased were neither the agents nor the licensees of the patentee. They had the title to, and the right to sell, the article

purchased without accounting for the proceeds to the patentee and without making any further payment than had already been made in the purchase from the agent of the patentee. Upon such facts as are now presented we think the right to vend secured in the patent statute is not distinguishable from the right of vending given in the copyright act. In both instances it was the intention of Congress to secure an exclusive right to sell, and there is no grant of a privilege to keep up prices and prevent competition by notices restricting the price at which the article may be resold. The right to vend conferred by the patent law has been exercised, and the added restriction is beyond the protection and purpose of the act. This being so, the case is brought within that line of cases in which this court from the beginning has held that a patentee who has parted with a patented machine by passing title to a purchaser has placed the article beyond the limits of the monopoly secured by the patent act.

In *Adams vs. Burke*, 17 Wall. 453, Mr. Justice Miller, delivering the opinion of the court, pertinently said (p. 455):

"The vast pecuniary results involved in such cases, as well as the public interest, admonish us to proceed with care, and to decide in each case no more than what is directly in issue.

"The true ground on which these decisions rest is that the sale by a person who has the full right to make, sell, and use such a machine carries with it the right to the use of that machine to the full extent to which it can be used in point of time.

"The right to manufacture, the right to sell, and the right to use are each substantive rights, and may be granted or conferred separately by the patentee.

"But, in the essential nature of things, when the patentee, or the person having his rights, sells a machine or instrument whose sole value is in its use, he receives the consideration for its use and he parts with the right to restrict that use. The article, in the language of the court, passes without the limit of the monopoly. That is to say, the patentee or his assignee having in the act of sale received all the royalty or consideration which he claims for the use of his invention in that particular machine or instrument, it is open to the use of the purchaser without further restriction on account of the monopoly of the patentees."

Bloomer vs. McQuewan, supra; *Good-year vs. Beverly Rubber Company*, 1 Cliff. 348, 351, 10 Fed. Cases, 638; *Coffee vs. Boston Belting Company*, 22 How. 217, 223;

Keeler vs. Standard Folding Bed Company, 157 U. S. 659.

Holding these views, the question propounded by the Court of Appeals will be answered in the negative, and it is so ordered.

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SPECIAL LIQUOR TAX LIABILITY.

Concerning the special tax liability of manufacturers of and dealers in flavoring extracts and soda-water syrups containing alcohol and alcoholic compounds containing drugs, Commissioner Cabell has issued a compilation of the various rulings on the subject, as follows:

In order for a manufacturer or a dealer to be exempt under the provisions of Section 3246, Revised Statutes, from special tax liability on account of the manufacture or sale of an alcoholic compound containing drugs or medicines, the preparation must conform to the following standard:

First: The preparation must contain no more alcohol than is necessary for the legitimate purpose of extraction, solution or preservation.

Second: As the minimum dosage each one ounce liquid of the completed preparation must carry in it approximately an average U. S. P. dose for an adult of some drug or drugs of recognized therapeutic value, either singly or in compatible combination.

For the manufacture or sale of preparations conforming to this standard the special tax of a rectifier or retail dealer is not required so long as the preparation is sold for genuine medicinal purposes. It should be remembered, however, that even though a compound conforms to this standard in its ingredients, as U. S. P. Jamaica ginger, for example, or other similar compounds, the sale thereof for beverage purposes under circumstances from which the seller could readily deduce an intention to use it as a beverage, would involve the seller in special tax liability as a liquor dealer.

Manufacturers using a formula which calls for drugs sufficient to conform to the standard herein should be very careful to see that the ingredients and processes used are such that the full strength called for by the formula is present in the product. The standard contained herein sets forth the

maximum amount of alcohol and the minimum amount of medicinal ingredients necessary to change the alcohol to such an extent as to relieve the dealer from special tax liability. A common case of manufacturers incurring liability through failure to exercise this care is found in various beef, iron and wine compounds. The standard of this office (see T. D. 1358), based upon the formula on page 1821, Nineteenth Edition of the United States Dispensary, is 1.4 percent of proteids and 0.2 percent of iron. Many samples of beef, iron and wine received in this office are markedly deficient in proteids, the claim being made after liability is asserted that the Dispensary formula was followed, but that the beef extract must have been of a low quality, which circumstance, of course, does not relieve the manufacturer from tax liability.

Apothecaries are permitted under the exempting provisions of Section 3246, Revised Statutes, to carry in stock distilled spirits and wines and to use same in the preparation of tinctures and other U. S. P. preparations, and in the compounding of bona fide prescriptions, and no special tax is required for the sale thereof, provided the spirits or wine is compounded prior to sale with drugs sufficient in character and amount to so change the character of the alcohol as to render it unsuitable for use as a beverage. The sale, however, of spirituous liquors or wines not compounded as above indicated, even on a physician's prescription and for purely medicinal purposes, renders the person making such sale liable to internal revenue special tax.

In the same way the sale of alcohol for bathing purposes, even on a physician's prescription, renders the person making the sale liable to internal revenue special tax. If, however, the alcohol before sale is rendered by the apothecary unfit for beverage uses, in accordance with any formula approved for destruction of identity of alcohol in scientific institutions in hospital departments (see T. D. 1757), no tax liability will be incurred, but the burden of clearly proving this is on the person making the sale. In general exemption from liability to special tax on account of filling physicians' prescriptions is secured to apothecaries by having the prescription itself specify the precise nature and amount of the ingredients to be added to the compound, with the result that

the compound thus prepared is rendered, as above indicated, unfit for beverage purposes.



ABSTRACT OF LEGAL DECISIONS.

PATENTEE'S RIGHT TO FIX PRICE OF PATENTED ARTICLES SOLD. The United States Supreme Court has decided a case of the greatest interest to the owners and retailers of thousands of patented articles. The case was certified to the court by the Court of Appeals of the District of Columbia. The facts as stated in the certificate are as follows: Bauer & Cie., of Berlin, Germany, were the assignees of the United States patent, No. 601,995, dated April 5, 1898, covering a water soluble albuminoid known as "Sanatogen" and its process of manufacture. About July, 1907, they entered into an agreement with F. W. Hehmeyer, doing business in the city of New York under the trade name of The Bauer Chemical Co., making him the sole agent and licensee for the sale of the product in the United States. The agreement contemplated that Hehmeyer should have power to fix the price of sale to wholesalers or distributors and to retailers, and to the public. It further contemplated that Hehmeyer should receive the product at manufacturing cost, the net profits obtained by him to be shared equally by the parties to the agreement. Since April, 1910, the product had been sold by the owners and their licensees in sealed packages bearing the following:

"Notice to the Retailer.

"This package of Sanatogen is licensed by us for sale and use at a price not less than one dollar (\$1.00). Any sale in violation of this condition, or use when so sold, will constitute an infringement of our patent No. 601,995, under which Sanatogen is manufactured, and all persons so selling or using packages or contents will be liable to injunction and damages.

"A purchase is an acceptance of this condition. All rights revert to the undersigned in the event of violation.

"The Bauer Chemical Co."

The defendant was the proprietor of a retail drug store in Washington, D. C. He purchased of The Bauer Chemical Company for his retail trade original packages of Sanatogen bearing the above notice. These packages he sold at retail at less than one dollar, and, persisting in such sales, the

plaintiffs, in 1911, severed relations with him. He thereupon, without their consent, purchased the original packages within the District of Columbia from jobbers, and sold them at retail at less than the price fixed in the notice, and stated his intention to continue to do so.

The question in the case was: Did the defendant's acts, in retailing at less than the price fixed in the notice, original packages of Sanatogen purchased of jobbers, constitute infringement of the plaintiff's patent?

The opinion of the Supreme Court was given by Mr. Justice Day. The right to make, use and sell an invented article, he said, is not derived from the patent law. This right existed before and without the passage of the law and was always the right of an inventor. The act secured to the inventor the *exclusive* right to make, use and vend the thing patented, and consequently to prevent others from exercising like privileges without the consent of the patentee. *Bloomer v. McQuewan*, 14 How. 539, 549; *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S. 405, 425. The right to make can scarcely be made plainer by definition, and embraces the construction of the thing invented. The right to use is a comprehensive term and embraces within its meaning the right to put into service any given invention. To vend is also a term readily understood and of no doubtful import. Its use in the statute secured to the inventor the exclusive right to transfer the title for a consideration to others. In the exclusive rights to make, use and vend, fairly construed, with a view to making the purpose of Congress effectual, reside the extent of the patent monopoly under the statutes of the United States. *Bloomer v. McQuewan*, *supra*, 549. The question for judicial determination was: May a patentee by notice limit the price at which future retail sales of the patented article may be made, such article being in the hands of a retailer by purchase from a jobber who has paid to the agent of the patentee the full price asked for the article sold?

That this could not be done in case of articles not protected by the patent monopoly was settled in *Dr. Miles Medical Co. v. Park & Sons Co.*, 220 U. S. 373, in which it was held that an attempt to thus fix the price of an article of general use would be against

public policy and void. Whether Congress has conferred such a right of restriction upon a patentee has never before been determined by the Supreme Court. The case of *Bobbs-Merrill Co. v. Straus*, 210 U. S. 339, was made the copyright statute, from which the word "use" is absent. The plaintiff relied chiefly upon *Henry v. Dick Co.*, 224 U. S., where the restriction was sustained because of the right to use the machine granted in the patent statute, distinguishing in that respect the patent from the copyright act. In that case a patented mimeograph had been sold which bore an inscription in the form of a notice that the machine was sold with the license restriction that it might only be used with stencil, ink and other supplies made by the A. B. Dick Company, the owners of the patent. The alleged infringer sold to the purchaser of the mimeograph a can of ink suitable for use with the machine with full knowledge of the restriction and with the expectation that the ink sold would be used in connection with the machine. It was expressly stated in the opinion that the machine was sold at cost or less and that the patentee depended upon the profit realized from the sale of the non-patented articles to be used with the machine for the profit which he expected to realize from his invention. (224 U. S. 26.)

It was contended in argument that the notice in the present case deals with the use of the invention, because the notice states that the package is licensed "for sale and use at a price not less than one dollar," that a purchase is an acceptance of the conditions, and that all rights revert to the patentee in the event of violation of the restriction. But the court held that it would be a perversion of terms to call the transaction in any sense a license to use the invention. There was no showing of a qualified sale for less than value for limited use with other articles only, as was shown in the *Dick* case.

The real question the court held to be whether in the exclusive right secured by statute to "vend" a patented article there is included the right, by notice, to dictate the price at which subsequent sales of the article may be made. The patentee relied solely upon the notice quoted to control future prices in the resale by a purchaser of an article said to be of great utility and

highly desirable for general use. The defendant and the jobbers from whom he purchased were neither the agents nor the licensees of the patentee. They had the title to, and the right to sell, the article purchased without accounting for the proceeds to the patentee and without making any further payment than had already been made in the purchase from the agent of the patentee. Upon such facts as were presented the court considered the right to vend secured in the patent statute was not distinguishable from the right of vending given in the copyright act. In both instances it was the intention of Congress to secure an exclusive right to sell, and there was no grant of a privilege to keep up prices and prevent competition by notices restricting the price at which the article might be resold. The right to vend conferred by the patent law had been exercised, and the added restriction was beyond the protection and purpose of the act. That being so, the case was brought within that line of cases in which the Supreme Court from the beginning has held that a patentee who has parted with a patented medicine by passing title to a purchaser has placed the article beyond the limits of the monopoly secured by the patent act. The question propounded by the Court of Appeals was therefore answered in the negative. Messrs. Justices McKenna, Holmes, Lurton and Van Devanter dissented.

Bauer & Co. v. O'Donnell, U. S. Supreme Court, decided May 26, 1913.

MISBRANDING—"PACKAGE" — PRESCRIPTION.—Proceedings for misbranding were instituted against an Ohio corporation doing business and having its principal office at Lebanon, Ohio, where it maintained a sanatorium for the treatment of persons addicted to the drug and liquor habit. It also treated patients by correspondence. According to an agreed statement of facts the defendant shipped two boxes of medicine by railway from Lebanon to Washington, D. C. All the bottles contained alcohol as one of the ingredients, and some contained as another ingredient morphine in varying and diminishing quantities. The bottles were labeled "Maplewood Sanatorium. Ledger M. 45. 3.609. Directions: Take half a tablespoonful four times a day and as directed." The president of the defendant company,

who was also its medical director, was a graduate of Columbia University and a specialist in treating patients addicted to liquor and drug habits. The agreed statement of facts stated: "It is a recognized fact by the medical profession generally that in the treatment of diseases, especially the drug habit, it is an important, and in most cases a vital factor, that the patient should not know the composition of the medicines given in such treatment." This fact was offered as a defense to the alleged misbranding, because correct labeling and branding would defeat the object of the treatment.

The information charged that each of the bottles contained in the packages was misbranded. It was held that it was not necessary to allege that the boxes containing the bottles were misbranded; the word "package" as used in the Federal Pure Food and Drugs Act having reference to the package which passes into the possession of the public, or the real consumer, and the words "original unbroken package" to the package in the form in which it is received by the vendee or consignee. It was also held that it was no defense that the sending of the medicine was a mere incident of the defendant's employment, the primary object of which was the diagnosis of the patient's ailment and the preparation of a prescription for the needs of his particular case.

Dr. J. L. Stephens Co. v. United States, (C. C. A.), 203 Fed. 817.

TAX ON BAY RUM IMPORTED FROM PORTO RICO.—The question was certified to the United States Supreme Court whether bay rum imported from Porto Rico subsequent to the passage of the act of April 12, 1900, and prior to the passage of the act of February 4, 1909, was subject to the payment of a tax equal to the internal revenue tax imposed in the United States, under sections 3248, and 3251 (U. S. Comp. Stat., 1901, pp. 2107, 2111), on "distilled spirit, spirits, alcohol, and alcoholic spirit." Section 3 of the act of 1900 provides that articles of merchandise of Porto Rican manufacture, coming into the United States, shall pay a tax "equal to the internal revenue tax imposed in the United States upon the like articles of merchandise of domestic manufacture." It was held that substance, and not name, was the test of the likeness, and that the imposition of a specific tax upon bay rum

imported from Porto Rico, made by the act of February 4, 1909, was not a congressional declaration that bay rum so imported was not subject to a tax under prior statutes. The question of the Court of Appeals was answered in the affirmative.

Jordan v. Roche, 33 *Sup. Ct.* 573.

LICENSE TO SELL MEDICINES—ORIGINAL PACKAGES.—Appeal was made from a conviction of being a traveling person pursuing the occupation of selling medicines without a license. The defendant had a two-horse hack on which was painted the name of certain remedies, with which he traversed a county in Texas, selling these as a regular occupation. It was held that the resident agent of a foreign manufacturing corporation, who receives its goods in bulk, including patent and other medicines, unpacks them at his house, puts part in his team, and retails them from place to place, making his profits by commissions on his sales, was not engaged in interstate commerce, but was engaged in the occupation of peddling within the state, and was therefore liable for the license tax.

Shed v. State, *Texas Criminal Appeals*, 155 *S. W.* 524.

PURCHASE OF DRUG BUSINESS—VALIDITY OF CONTRACT.—In an action upon a written contract for the sale of a drug-store owned by the plaintiff "including the business of a druggist," the stock to be taken "at the invoice purchase price," which contract the defendant refused to carry out, one defense was that the contract was unenforceable, because the good will had been built up by acts in violation of the law, as the plaintiff, although a physician, was not a pharmacist or assistant pharmacist, and at no time had either in his employ. It was held that these allegations constituted no defense.

It was also held that a provision for the appraisalment of the stock "at the invoice purchase price" meant that the goods were to be appraised at what had been paid for them when they were bought, not at what it would cost to buy them from wholesalers at the time of the appraisalment.

Swisher v. Dunn, *Kansas Supreme Court*, 131 *Pac.* 571.

TRADE-MARK—INFRINGEMENT OF LABEL.—A trade-mark case as based upon a register-

ed trade-mark for a face cream consisting of a drawing showing a circular center containing a woman's face, with the name of the article in a circle around the head. Practically the only resemblance between the two labels was the fact that both had a woman's head in the center. The trade-mark made no mention of coloring; besides which the defendant used green where the complainant used red. It was held there was no infringement.

Aubry Sisters v. Creme de Mohr Co., (*C. A.*), 203 *Fed.* 861.

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NOTICES OF JUDGMENTS UNDER FEDERAL FOOD AND DRUGS ACT.

No. 2158. *Adulteration and Misbranding of Apple Flavored Vinegar Compound.* Product not apple vinegar but a solution of dilute acetic acid, colored and flavored with boiled apple juice in imitation of apple vinegar compound. Sharp-Elliott Manufacturing Co., El Paso, Texas. Fine of \$100. Western District of Texas.

No. 2159. *Adulteration and Misbranding of Olive Oil*, cotton seed oil having been substituted in part. Gengars & Muselli, New York. Fine of \$50. Southern District of New York.

No. 2160. *Same offense.* Robert Fanaro, New York. Fine of \$75.

No. 2162. *Misbranding of Vanilla Extract.* Product labeled "1 Ounce full measure," but did not contain that amount. Shippers, Van Duzer Co., New York. Forfeited. District of Columbia.

No. 2165. *Adulteration and Misbranding of Syrup.* Substitution of commercial glucose for drip syrup. Farrell & Co., Omaha, Neb. Forfeited. Colorado.

No. 2169. *Adulteration and Misbranding of Jamaica Ginger.* Product not a concentrated essence of Jamaica ginger as represented, but an appreciable quantity of capsicum had been substituted for Jamaica ginger, and label falsely represented it to be unequalled for colic, cramps, diarrhoea, flatulency and dyspepsia, and it contained 60.4 percent of alcohol not declared on the label.

Union Manufacturing & Packing Co., Salt Lake City, Utah. Fine of \$10. Utah.

No. 2170. *Adulteration and Misbranding of Vinegar*. Product composed of dilute acetic acid and other substances in imitation of cider vinegar. M. H. & M. S. Place, Oswego, N. Y. Forfeited and released. Rhode Island.

No. 2172. *Adulteration of Candy Cigars*. Product contained arsenic. E. Greenfield's Sons, New York. Sentence suspended. Southern District of New York.

No. 2173. *Adulteration of Mineral Water*. Product contained B. coli organisms. Henry Schierer, New York. Sentence suspended. Southern District of New York.

No. 2182. *Misbranding of Beer*. Product labeled carbonated soda, absolutely non-intoxicating, but was in fact ordinary beer. Wheeling Specialty Co., Wheeling, W. Va. Fine of \$15. Northern District of West Virginia.

No. 2185. *Adulteration and Misbranding of Vinegar*. Product contained water. Dawson Bros. Mfg. Co., Memphis, Tenn. Forfeited and sold. Eastern District of Louisiana.

No. 2186. *Adulteration and Misbranding of Phillips' Digestible Cocoa*. Product a compound of cocoa, sugar, phosphates and vanilla flavoring. The statement in a label on the back of the can as to the composition of the contents held not sufficient to correct the statement in larger type on the principal label on the front of the can that the product was cocoa. Shippers, Charles H. Phillips Chemical Co., New York. Forfeited and sold. Eastern District of Louisiana.

No. 2188. *Adulteration and Misbranding of Acetanilid Tablets and Nitroglycerin Tablets*.

(1) Acetanilid Tablets labeled "Acetanilid 3 grs.," but they only averaged 2.57 grains acetanilid per tablet. (2) Nitroglycerin tablets labeled "1-50 gr.," but contained only 0.012 grain per tablet. Sutliff &

Case Co., Peoria, Ill. Fine of \$10. Southern District of Illinois.

No. 2191. *Adulteration and Misbranding of Nux Vomica Tablets*. Product labeled "Nux Vomica Powd. Ext. 1-4 gr.," but tablets contained only one-sixth of a grain of nux vomica powdered extract. Sutliff & Case Co., Peoria, Ill. Fine of \$10. Southern District of Illinois.

No. 2194. *Adulteration and Misbranding of Vanilla Extract*. Analysis showed: vanillin, 0.15 percent; coumarin, 0.13 percent; iodine test, positive; lead number at 44.009; caramel, present. Misbranded and adulterated as imitation and by use of caramel to conceal inferiority. Ferris-Noeth-Stern Co., Baltimore, Md. Fine of \$5. Maryland.

No. 2195. *Adulteration and Misbranding of Malt Saccharine*. Addition of ground malt. Ferris-Noeth-Stern Co., Baltimore, Md. Fine of \$20. Maryland.

No. 2198. *Adulteration and Misbranding of Vanilla Extract*. Diluted and adulterated with inferior substances. Steinwender-Stoffregen Coffee Co., Fargo, N. Dak. Released on filing bond. North Dakota.

No. 2199. *Misbranding of Bitters*. Labeled "Pale Orange Bitters." Analysis, Alcohol, 32 percent; colored with caramel. Misbranded because label did not state quantity or proportion of alcohol. Betterman-Johnson Co., Cincinnati, Ohio. Fine of \$25 and costs. Southern District of Ohio.

No. 2200. *Adulteration and Misbranding of Orange Flavor*. Analysis showed: orange-oil, 2.5 percent; glycerin and gums present. Label stated "4 Drops equal a teaspoonful of ordinary extract xxx fourteen drops to equal an ounce." American Products Co., Cincinnati, Ohio. Fine of \$25 and costs. Southern District of Ohio.

No. 2201. *Adulteration and Misbranding of Grenadine Syrup*. Product a solution of sugar and water, artificially colored and flavored and containing only an infinitesimal quantity, if any, of the juice of the pomegranate. Betterman-Johnson Co., Cincinnati, Ohio. Fine of \$25 and costs. Southern District of Ohio.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

- 100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.
- 200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.
- 50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.
- 100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.
- 200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.
- 50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.
- 100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.
- 200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

ERNEST BERGER MEMBERSHIP PRIZE.

Ernest Berger, of Tampa, Fla., annually offers to the person making the highest rating before the Florida Board of Pharmacy a prize consisting of a nomination to membership in the A. Ph. A. and payment of the first year's dues. The prize this year was won by Mrs. Mabel Lyon, of Bowling Green, Ky., who made the highest average in all subjects.

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STURMER AND MEEKER PRIZES.

Dr. G. H. Meeker and Prof. J. W. Sturmer, of the Medico-Chi College of Philadelphia, annually offer a nomination to membership prize and first year's fee to the two students ranking highest in chemistry and pharmacy respectively.

The prize winners for this year were John Irvin Hoffman, of Coal Dale, Pa., and Hyman W. Ostrum, of Philadelphia.

The JOURNAL extends congratulations to Messrs. Hoffman and Ostrum for the excellence of scholarship which the nomination to membership indicates.

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A. PH. A. TO BE ENTERTAINED AT CINCINNATI.

It is the desire of the Cincinnati Branch, the Ohio Valley Druggists' Association and the American Druggists' Fire Insurance Co. to show some attention to members of the American Pharmaceutical Association who stop in Cincinnati on their way to the Nashville meeting.

Members who will find it convenient to stop in the city are requested to notify either C. G. Merrell, of the Merrell Chemical Co., or F. H. Freericks, of the A. D. F. I. Co., of the time of their arrival and the probable length of their stay.

Those who have experienced Cincinnati's hospitality in the past can recommend the brand.

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EXCURSION TO MAMMOTH AND COLOSSAL CAVERNS.

Those who return from the Nashville meeting by the way of Cincinnati will have the opportunity of stopping over at Glasgow

Junction for the side trip to the wonderful Mammoth and Colossal Caverns.

The only extra cost will be the fare from Glasgow Junction, about 12 miles, and the expense of board at Mammoth Cave Hotel, and guide fees, which in all should not amount to more than five to six dollars.

The extra time involved will not require more than a day and a half. All who can possibly do so should avail themselves of the opportunity to see these underground wonders.



ITINERARY FROM CHICAGO TO NASHVILLE.

For the meeting of our Association at Nashville, Tenn., August 18 to 23, the undersigned, Chairman Transportation Committee, has arranged with the Chicago and Eastern Illinois railroad for train service for the movement of those attending from Chicago and tributary territory. Special Pullman cars will be provided on train leaving La Salle station, Chicago, 6:20 p. m., Sunday, August 17, arriving Nashville 7:55 a. m., Monday, August 18.

In order to make proper arrangements to accommodate those making the trip, it will be necessary to advise the undersigned as soon as possible whether it is your intention to join our party.

A special reduced round trip fare of \$18.80 will be in effect from Chicago and tickets will be on sale August 15, 16 and 17, with return limit of September 3. The one-way fare from Chicago is \$10.75 and we can also take advantage of the party rate, which is \$9.30 each way for party of ten or more. The price of the Pullman is \$2.50 for lower berth, \$2 for upper berth and \$9 for drawing room. For those attending who wish to return by way of Cincinnati in order to attend the meeting of the N. A. R. D. Association, the one-way fare from Nashville to Cincinnati is \$8.30 and there is also a party rate for ten or more traveling together of \$6.05. The local rate from Cincinnati to

Chicago is \$6, or two cents a mile, there being no special party fare in effect.

You will note that, although it is impossible for us to secure a routing of tickets from Chicago to Nashville, returning via Cincinnati, arrangements can be made as outlined above.

Yours truly,

WILHELM BOBEMANN,

Chairman Transportation Committee.



ITINERARY FROM NEW YORK TO NASHVILLE.

Leave New York Saturday, Aug. 16, 9:30 p. m., Pa. R. R. depot, 31st street.

Leave Philadelphia, Sunday, Aug. 17, 12:15 a. m.; leave Baltimore, Sunday, Aug. 17, 2:50 a. m.; leave Washington, Sunday, Aug. 17, 4:10 a. m., via Southern R. R.

Arrive at Nashville, Tenn., 2:55 a. m., Monday, Aug. 18, 1913.

No change of cars from New York to Nashville. Passengers from Baltimore and Washington may board local sleepers any time after 10 p. m. on Saturday and transfer on Saturday morning to the Nashville car. Arriving at Nashville (2:55 a. m.) the car will be sidetracked and passengers may sleep till 7 a. m.

Fare, New York to Nashville, \$19.30; Philadelphia to Nashville, \$17.50; Baltimore to Nashville, \$15.50; Washington to Nashville, \$14.75.

This fare is the so-called party rate and will be granted only to parties of ten or more. Smaller numbers must pay full fare to Washington, where the whole party will join and travel at the reduced rate (2 cents a mile.)

Sleeper, from New York to Nashville, lower berth \$5.50, upper \$4.50; from Philadelphia, Baltimore and Washington, lower \$5, upper \$4. Return fare the same.

Dining car on train.

Members who wish to take this train should send check at least three days before the departure to D. C. Alpers, City Island, N. Y., or A. S. Thwait, Agent, 264 5th Ave., N. Y.

The Bulletin Board

SECTION ON HISTORICAL PHARMACY.

BULLETIN No. 1.

The members of the A. Ph. A. are earnestly requested to submit papers, letters, photographs, books, etc., on historical subjects in Pharmacy at the Convention at Nashville, Tenn., in August. This Section is becoming of increased interest and of noted value to the Association. To this end we desire your cooperation that this meeting shall contribute its part to the work so successfully begun a few years ago. Your prompt consideration will be appreciated.

Sincerely yours,

JOHN G. GODDING, Chairman.

CASWELL A. MAYO, Historian.

FREDERICK T. GORDON, Secretary.

Boston, June 2, 1913.



CINCINNATI BRANCH WILL ENTERTAIN.

The next meeting of the American Pharmaceutical Association begins at Nashville, August 18th, and many members will pass through Cincinnati on the way to the meeting. The Cincinnati Branch have a special Committee appointed for the purpose and extends a cordial invitation to all members to accept its hospitality on Sunday, August 17th, and it is hoped that as many as possible will arrange to arrive at Cincinnati Sunday morning and leave with the Cincinnati members Sunday evening at 10:30, arriving in Nashville at 8:05 Monday morning, August 18th, in time for the Council Meeting and in ample time for all members to get comfortably settled in their rooms before opening of the first session.

On a previous occasion it has been our pleasure to have as our guests a few of the members passing through our city and the enjoyment that seemed to have been derived therefrom has lead us to feel that a larger number may find it worth while to start a few hours earlier and spend Sunday in visiting some of the points of interest in Cincinnati.

We hope that many will be with us and we will appreciate advices from as many as can let us know in advance so that the Committee can make its arrangements accordingly.

Fraternally,

CHAS. G. MERRELL, Chairman,

P. O. Box No. 432,

FRANK H. FREERICKS,

EDWARD VOSS,

Committee of the Cincinnati Branch.



SLEEPING CAR RESERVATIONS

As a member of the Transportation Committee of Cincinnati, I will be glad to hear from all members who expect to attend the meeting at Nashville and come toward Cincinnati and who have not made through sleeping car reservations to Nashville.

There are two coaches on the regular train and I will reserve all berths in one of these up to the last moment and can secure an additional car going from and through Cincinnati if we require more space. Reservations will be made in the way in which they are received. If upper berths are preferred by any, I shall hope to hear from them as early as possible.

The round trip of \$12.75 from Cincinnati to Nashville has been made on account of this Convention. Very truly yours,

C. G. MERRELL,

P. O. Box 432, Cincinnati.



NORTHWESTERN UNIVERSITY CHANGE IN THE REQUIRE- MENTS FOR ADMISSION TO SCHOOL OF PHARMACY.

Beginning with the session of 1913-1914, applicants for admission to the School of Pharmacy, whether candidates for the degree of Graduate in Pharmacy or for the degree of Pharmaceutical Chemist, must give evidence of preparation in fifteen units of high school work, or an equivalent.

While this is more than the usual admission requirements enforced by schools of pharmacy, it is believed it is distinctly in the interest of the graduates and necessary for that work of the school which will furnish the basis for the best success in the practice of pharmacy.

The pharmacist in order to serve the phy-

sician properly must in the near future have at his command a thorough knowledge of bacteriology, physiological chemistry, and pharmacology, which can be obtained only by a systematic training in a well-equipped school whose students are well prepared. In order to provide thorough instruction, the School of Pharmacy will include courses in these subjects as a part of the regular work for a degree.

The School of Pharmacy will be removed to the buildings of the Northwestern University Medical School, 24th and Dearborn Streets, Chicago. The best class-room and laboratory equipments will be provided, and the close relations of the two schools make it possible to offer unusually strong courses in pharmacy.



QUARTERLY MEETING OF THE EXECUTIVE COMMITTEE OF THE AMERICAN DRUGGISTS' FIRE INSURANCE COMPANY.

The regular Quarterly Meeting of the Executive Board of the A. D. F. I. Co. was held in Cincinnati, on May 16-17. There were present Messrs. Avery, Heinritz, Beal, Kauffman, Rothwell, Zwick and Freericks. The Board found that the Company had made splendid progress during the first quarter of the year.

On the 31st day of March the total insurance in force amounted to \$10,550,965.73, at a premium of \$109,322.91. Of this amount there was reinsured at that time insurance amounting to \$728,124.50, at a premium of \$8,456.15. After deducting this reinsurance the Company, besides its capital and surplus, on the business retained by it, had increased its reinsurance reserve to \$50,545.89, which is part of the total assets amounting to \$327,634.21. The increase in the reinsurance reserve on the business written for the first three months of the year amounted to \$2,083.92. The Board authorized the purchase of Ohio Municipal Bonds for a total of \$9,500.

The net fire losses for the first three months of the year amounted to \$16,404.16. The net expenses for the first three months of the year amounted to \$10,233.07. The total income for the first quarter, not including maturing bonds, and reinsurance refunded on fire losses, and after deducting

premiums paid out for reinsurance amounted to \$33,050.43.

With the increase in business shown it is fairly estimated that the Company will save its policyholders during this year the sum of fully \$50,000 in their premium cost.

The Executive Board devoted considerable time and attention toward taking part in the entertainment of the N. A. R. D. Convention, in cooperation with the Ohio Valley Druggists' Association. Preliminary arrangements were made for an entertainment which will be unique in character. It is expected to make the occasion a memorable one, without interfering with the regular work of the Convention.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



ST. LOUIS BRANCH.

A regular meeting of the Saint Louis Branch of the American Pharmaceutical Association was held in the Saint Louis College of Pharmacy on Friday evening, May 16. In the absence of the President and the Vice Presidents, and on supported motion, Professor Leo Suppan acted as Chairman. The reading of the minutes of the previous meeting was omitted.

Professor Suppan, in his usual interesting way, introduced Mr. L. P. Jensen, who gave an illustrated lecture on "Plants Growing in the Vicinity of Saint Louis Used in Medicine and for Ornamental Planting."

In his opening remarks Mr. Jensen stated that he was not a pharmacist, and hence was somewhat handicapped as to the use of

which many of the plants are put in medicine; that he studied them principally from the botanical standpoint, and for decorative effects.

Continuing, he said that there are about five hundred species of trees, shrubs and plants growing within a radius of fifty miles of Saint Louis that can be planted in our parks and home-grounds to make them more attractive.

Mr. Jensen then exhibited herbarium specimens of about eighty plants, which have been used in medicine, labeled with the botanical and common names, which he gathered on the Grant Farm, Saint Louis County:

Acer negundo, Box-elder, Ash-leaved Maple.
Acer nigrum, Black Sugar Maple.
Aesculus glabra, Ohio Buckeye.
Ailanthus glandulosa, Tree of Heaven.
Betula nigra, Red or River Birch.
Celtis occidentalis, Hackberry Sugarberry.
Diospyrus Virginiana, Persimmon.
Fraxinus Americana, White Ash.
Gleditsia triacanthos, Honey Locust.
Gymnocladus Canadensis, Kentucky Coffee Tree.
Carya Alba, Mocker-nut.
Hicoria glabra, Pignut.
Juglans nigra, Black Walnut.
Juniperus Virginiana, Red Cedar, Savin.
Morus rubra, Red Mulberry.
Platanus occidentalis, Button-wood, Sycamore, Plane Tree.
Prunus Pennsylvanica, Wild Red Cherry.
Prunus scrotina, Wild Black Cherry.
Quercus alba, White Oak.
Quercus rubra, Red Oak.
Robinia pseud-acacia, Black Locust.
Tilia Americana, Basswood, American Linden.
Ulmus fulva, Slippery, Red or Moose Elm.
Alnus rugosa, Smooth Alder.
Cercis Canadensis, Red-bud, American Judas Tree.
Cornus Florida, Flowering Dog-wood.
Crataegus tomentosa, Pear Thorn.
Euonymus atropurpureus, Burning Bush.
Prunus Americana, Wild yellow or Red Plum.
Staphylea trifolia, Bladder Nut.
Sassafras officinale, Sassafras.
Pyrus coronaria, American Crab Apple.
Salix purpurea, Purple Willow.
Cephalanthus occidentalis, Button-bush.
Clethra alnifolia, Sweet Pepper-bush.
Corylus Americana, Hazel-nut.
Rhus Canadensis, Dewberry.
Rhus copalina, Black Sumach, Dwarf Sumach.
Rhus glabra, Smooth Sumach.
Ribes floridum, Wild Black Currant.
Rubus occidentalis, Black Raspberry.

Sambucus Canadensis, Common Elder.
Symphoricarpos racemosa, Indian Currant.
Viburnum prunifolium, Black Haw.
Ampelopsis arborea, Pepper Vine, Woodbine.
Bignonia capriolata, Cross Vine.
Celastrus scandens, Bitter Sweet.
Menispermum Canadensis, Moon Seed.
Achillea millefolium, Yarrow, Milfoil.
Acorus calamus, Sweet Flag, Calamus.
Arisaema triphyllum, Indian Turnip, Jack-in-the-Pulbit.
Asclepias tuberosa, Butterfly Weed.
Contiana flaxida, Yellow Gentian.
Geranium maculatum, Cranesbill.
Hibiscus moschatos, Swamp Rose Mallow.
Nepeta hederacea, Ground Ivy.
Podophyllum peltatum, May Apple.
Polygonum biflorum, Solomon's Seal.
Sanguinaria Canadensis, Blood Root.
Smilacina racemosa, Wild Spikenard.
Tradescantia grandiflorum, Large-flowered, Wake-robin.
Typha latifolia, Broad-leaved Cat-tail.
Adiantum pedatum, Maiden Hair Fern.
Pteris aquilina, Common Brake Fern.
Hydrastis Canadensis, Golden Seal, Hydrastis.
Hamamelis Virginiana, Witch Hazel.
Zonothoxylum Americanum, Prickley Ash.
Rhus toxicodendron, Poison Sumac, Poison Ivy, and Poison Oak.
Euonymus atropurpureus, Burning Bush, Wahoo.
Rhamnus catharticus, Common Buckthorn.
Viola tricolor, Pansy.
Mentha piperita, Peppermint.
Monarda punctata, Horse-Mint.
Nepeta Cataria, Catnip.
Lycium Vulgare, Matrimony Vine.

Mr. Jensen concluded by saying that pharmacists should use their best influence to get the parks and public grounds in their cities and towns planted with native and naturalized plants as a means of preservation, for it is but a question of time until the trend of progress will have removed our primal forests and then many of our best plants will only be found as dried specimens in herbariums.

Among those who took part in the discussion were Messrs. J. M. Good, Francis Hemm, Julius Hoester, Charles N. Horton, Julius Hurter, Hosea Howard, J. W. Mackelden, George Ruths, W. H. Fly, E. A. Sennawald, Alexander Pearlstone, L. W. Devereur, O. S. Ledman, Leo Suppan, J. Kipp, G. T. Buehler, J. A. Wilkerson, Misses B. P. Cousins, Mary R. Cousins and Elizabeth Widman.

A vote of thanks was extended Mr. Jen-

sen for his interesting lecture and, on motion, the meeting adjourned.

J. W. MACKELDEN, Secretary.

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NASHVILLE BRANCH.

That the Denver meeting of the A. Ph. A. made no mistake when it selected Nashville, Tenn., as its next meeting place is evident, judging from the enthusiasm and activity which is being shown in this Southern city in its preparations for the convention, which meets here August 18.

The members of the Nashville branch began their preparations by holding a series of get-together meetings to which all the local druggists and their wives were invited. These meetings have resulted in much good by creating a feeling of good fellowship among them. The last of this series was held May 27 in the Y. M. C. A. building, with W. R. White as chairman. Enthusiastic speeches were made by Dr. E. A. Ruddiman, J. O. Burge, Charles S. Martin, Ira B. Clark, M. E. Hutton, C. C. Young and others. Dainty refreshments were served. A Ladies' Reception Committee was appointed, with Mrs. R. L. Thompson chairman.

A meeting of the Nashville Branch was held June 12 in the Board of Trade rooms in the Stanlman building, with Dr. J. O. Burge presiding. The meeting was devoted exclusively to the discussion of plans for the convention.

Ira B. Clark, chairman of the Membership Committee, reported the application of two new members. He stated that the distribution of the literature is still being pushed, and it is estimated that every druggist in the fifteen Southern states will get a notice of the meeting and a request to join. A letter will be mailed soon to the most prominent druggists, containing a personal appeal to them to join the Association, and a large increase in members is expected.

A beautiful badge was ordered, being a combination badge and watch fob, with a cross bar at the top bearing the letters A. Ph. A., and the number. On the ribbon below is the picture of the Hermitage enclosed in an oxidized silver rim.

The Entertainment Committee was heard from through its chairman, W. R. White, who stated that a joint committee consisting

of the directors of Board of Trade and the Industrial Bureau had been appointed by these organizations to cooperate with the local druggists in properly extending a royal Southern welcome to the visitors and would meet with them at an early date.

A complete list of rates were reported from the local hotels by J. B. Sand, chairman of the Hotel Committee.

Dr. E. A. Ruddiman reported having visited the recent meeting of the Georgia Pharmaceutical Association at Columbus, Ga.

A large delegation of local A. Ph. A. enthusiasts will attend the Memphis meeting of the Tennessee Pharmaceutical Association, July 8 to 10, where a great time is promised. Some big results for the A. Ph. A. is looked for by the Membership Committee.

WILLIAM R. WHITE, Sec'y.

Council Business

COUNCIL LETTER No. 15.

PHILADELPHIA, June 9, 1913.

To the Members of the Council:

Motions No. 24 (Appropriation of \$100 to National Drug Trade Conference, Second Meeting); No. 25 (Election of Members; Applications No. 135 to 175, inclusive); No. 26 (Approval of Suggested Program for 1913 Annual Meeting), and No. 27 (Election of Members; Applications No. 176 to 201, inclusive), have each received a majority of affirmative votes.

Motion No. 28 (Appropriation of \$2200 for Volume 59 of the Proceedings). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$2200, or so much thereof as is necessary be appropriated for Volume 59 of the Proceedings and Report on the Progress of Pharmacy. The above appropriation is approved by the Committee on Finance.

Chairman A. V. Pease, of the Section on Commercial Interests, requests an appropriation of \$50 to pay the expense incident to the securing of a lecture on "Scientific Salesmanship" to be delivered under the auspices of the Section on Commercial Interests.

Motion No. 29 (Appropriation of \$50 to Section on Commercial Interests). Moved

by J. H. Beal, seconded by J. A. Koch, that fifty dollars be appropriated for the above-named purpose.

The appropriation is approved by the Committee on Finance.

J. W. ENGLAND,
Secretary of the Council.



U. S. PUBLIC HEALTH SERVICE.

Gahn, Henry, Pharmacist. Granted two days' leave of absence May 16-17, 1913, under paragraph 210, Service Regulations. May 22, 1913.

Smith, L. E., Pharmacist. Granted seven days' leave of absence, from May 20, 1913, under paragraph 210, Service Regulations. May 19, 1913.

Macdowell, W. F., Pharmacist. Granted 18 days' extension of annual leave from May 7, 1913, on account of sickness. May 28, 1913.

LaGrange, J. V., Pharmacist. Granted one day's leave of absence, May 27, 1913, under paragraph 210, Service Regulations. May 27, 1913.

Ryder, L. W., Pharmacist. Granted two days' leave of absence, April 17-18, 1913, under paragraph 210, Service Regulations. May 31, 1913.

Troxler, R. F., Pharmacist. Granted two days' leave of absence in May, 1913, under paragraph 210, Service Regulations. June 2, 1913.

Sterns, C. O., Pharmacist. Granted one day's leave of absence, April 25, 1913, under paragraph 210, Service Regulations. May 31, 1913.

PROMOTION.

Pharmacist M. E. Berkowitz promoted to Pharmacist of the second class, to date from May 9, 1913.

ABOUT PRESCRIPTION WEIGHTS.

We wonder how many druggists observe all the precautions they should to properly keep their prescription weights so that their accuracy can at all times be depended upon? The usual custom is to keep the weights lying in a depression made in the plate of the prescription balance for that purpose. Others preserve them in boxes; the more care-

less ones—fortunately their number is small—leave them scattered about the prescription counter, where they must be hunted for and got together every time a prescription comes in to be filled. We have seen samples of such roving weights and have wondered that serious consequences have not followed upon their employment in filling prescriptions calling for potent medicaments.

Druggists could learn something in this respect from their chemist friends. If they went into the weighing room of a chemical laboratory they would notice that the chemist takes the tenderest care of his weights. They are always preserved in a box made for them, the smaller, flat ones being kept in the same box under a special plate of glass. They are never touched with the fingers, a pair of forceps being used for that purpose and for no other; this, also, has its own compartment in the box. The greatest precautions are taken to prevent any kind of substance, liquid or solid, from dropping upon the pieces of metal. If the weights are dusty they are not rubbed or scoured with a piece of paper or cloth, but are carefully dusted with a camel's hair brush. They are never allowed to remain in the balance pans, but are replaced in their case every time the weighing is finished. The chemist knows that if he failed in this case the weights would become inaccurate and his results vitiated.

Why should not the pharmacist exercise the same vigilance to assure himself that his weights are always true?—*The National Druggist*.

FORTUNE KEEPS NO VISITING LIST.

Thousands of men had that in them which could have made them a Napoleon or a Caesar, a Carnegie or a Field, but they remained nonentities simply because they had a fool idea that Fortune keeps a visiting list. She doesn't. She hasn't stirred from home since she first went into business. Her abode is way up among the crags. There are no tramways to her door. No man who ever found the path managed to leave footprints to guide another over exactly the same route. She gives nothing. She trades and she drives her bargains just as hard as a Monday shopper. The price of her goods must be paid for in grit and ability.—*Herbert Kaufman*.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

GORDON, FREDERICK TROUP, U. S. Navy,
From 2113 W. Norris St., Philadelphia, Pa.,
To 2115 Medary Ave., Philadelphia, Pa.

GITHIENS, THOS. S.,
From 602 Wrightman Bldg., 1524 Chestnut St., Philadelphia, Pa.,
To Rockefeller Institute, 66th and Avenue Ave., New York City.

MAISEL, JOSEPH,
From 133 Third Ave., Brooklyn, N. Y.,
To 866 Kelly St., New York, N. Y.

WILSON, CHAS. F.,
From 200 East 31st St., Chicago, Ill.,
To 255 East 30th St., Chicago, Ill.

MISCH, EDW. F.,
From Milford, Utah,
To Washington Ave. and 25th St., Ogden, Utah.

LEDERLE, A. L.,
From Detroit, Mich.,
To Leland, Mich.

SCHLICHTING, A. F.,
From Ann Arbor, Mich.,
To Agricultural College, N. Dak.

O'GORMAN, T. V.,
From Ellis Island, N. Y.,
To St. Joseph Home, 209 W. 15th St., New York City.

ROSE, MARTIN,
From Ft. Leavenworth, Kans.,
To Ft. Barry, Calif.

KROGER, HARRY A. R.,
From Ft. Casey, Wash.,
To Camp Downes, Manila, P. I.

BOYD, G. W. F.,
From 121 Second St., N. E., Washington, D. C.,
To Mass. Ave. and Second St., N. W., Washington, D. C.

PORTER, G. F.,
From Los Angeles, Calif.,
To 1068 Lane St., Riverside, Calif.

ROBINSON, DANIEL W.,
From Camp Treadwell, P. I.,
To Regan Barracks, Albay, P. I.

LOWE, CLEMENT B.,
From 6630 Germantown Ave., Philadelphia, Pa.,
To 150 E. Washington Lane, Philadelphia, Pa.

MONTGOMERY, MOSES, Sgt., H. C.,
From Ft. San Pedro, Iloilo, P. I.,
To Camp Bumpus, Leyte, P. I.

CULBERTH, DAVID M. R.,
From 1307 N. Calvert St., Baltimore, Md.,
To Spring Lake Beach, care Lucas Cottages, N. J.

LEVIN, DAVID,
From 5214 Ballard Ave., Seattle, Wash.,
To 4505 Frankford Ave., Philadelphia, Pa.

STEELE, JAS. G.,
From 1424 Laguna St., San Francisco, Calif.,
To Pacific Grove, Calif.

NELDEN, RALPH,
From 145 P St., Salt Lake City, Utah,
To Parkdale, Oregon.

LEECH, H. D.,
From U. S. Marine Hospital, Stapleton, N. Y.,
To New Orleans Quarantine Station, Quarantine, La.

OWEN, FRED S., Sgt., 1st Cl. H. C., U. S. A.,
From Ft. Warren, Boston Harbor, Mass.,
To Ft. Niagara, Youngstown, N. Y.

ELISBURG, LOUIS A.,
From 5200 Washington Blvd., Chicago, Ill.,
To 5035 Washington Blvd., Chicago, Ill.

WARD, A. J.,
From 2915 11th Ave., Denver, Colo.,
To Arcade No. 1, Railway Exchange Bldg., Denver, Colo.

SAHM, LOUIS N.,
From 22 Cliff St., New York City,
To 505 Hindson St., care Heller & Merz, N. Y. City

TO RESIDENCE UNKNOWN

DORAN, GEO. C.,
From Iloilo, P. I.

BJORK, NEILS J.,
From Cheyenne, Wyo.

THE FUTURE OF THE PHARMACIST.

The first issue of *Successful Medicine*, a bright, interesting journal devoted to the business side of medicine, and edited by H. R. Harrower of Chicago, contains an article the gist of which is that, "It pays to dispense." We do not need to recapitulate the arguments on this matter. In a narrow sense and under certain local conditions, it does pay to dispense, just as it pays to prescribe over the counter. In the broad sense of the ultimate welfare of all parties concerned it does not pay for any man to do that for which he is not specially trained and to take some other man's business from him.

With the present overcrowded conditions of both the medical and the pharmaceutical profession, and the growing scarcity of money in proportion to its purchasing power, it is inevitable that the keen competition for a living should result in violations of ethical principles among the members of each profession, and that the effects should be felt within and across professional lines. But we must maintain our ideals and make the economic conditions fit the ideals instead of lowering our ideals to fit an economic disturbance of supply and demand which can be corrected. This is especially true because, however much the individual may gain in a low financial sense from disregarding principles of ethics, no lowering of standards will produce any genuine improvement.

There are certain details, however, in which common sense—which is always good ethics—requires a readjustment of standards. First of all, we must face the fact that the modern materia medica contains a great many valuable remedies and a great many elegant and convenient preparations of old drugs, which cannot be manufactured in a retail drug store. The pharmacist must, therefore, act as the retailer of package goods. In the country and, to some extent in the city, economy, convenience and promptness of supply, compel the physician to dispense to a greater or less degree.

Secondly, the time-honored liquid mixture of principal drug, corrigent, adjuvant, and vehicle, has very largely given place to condensed medication in which tastelessness, directly or indirectly secured, has proved superior to older notions of palatability, and in which one drug is given at a time, for its own effect, in a dose that may be regulated from time to time without regard to that of adjuvants.

Thirdly, even within the memory of physicians still in active practice, drugs have gradually given place to mechanic, electric and other imponderable therapeutic agents and such drugs as are used, are being applied locally by the physician himself.

We do not mean to imply a disbelief in drugs. Many diseases are distinctly perversions of bodily chemistry; obviously they demand chemic correction. Moreover, while the ultimate explanation is not known, the fact remains that many drugs produce mechanic and chemic effects on various vital organs. We are inclined to believe that, while many drugs have been discarded and while we have learned that the use of others has been based on misconceptions or may properly yield to other measures, at no time have drugs properly prepared and used with discrimination, produced such satisfactory results as at present.—*Buffalo Medical Journal*.

The Journal of the American Pharmaceutical Association

Volume II

AUGUST, 1913

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Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE APPROACHING MEETING.

THE organization meeting of the A. Ph. A. was held at the New York College of Pharmacy, October 15, 1851, when the Association was launched under the title of the "National Pharmaceutical Convention," the present title being adopted at the second meeting, which was held at Philadelphia in October of the following year. Since then the Association has met annually, with the exception of the year 1861, when the breaking out of the war between the states forced all non-political questions into the background, and consequently the approaching meeting at Nashville will be the 61st annual, or counting the organization meeting, the 62d meeting of the Association.

In a country so young as ours, 62 years of continuous activity is noteworthy, and gives the A. Ph. A. an air of respectable antiquity among professional organizations of national scope, and its members may be pardoned if they take pride in the fact that the record of these 62 years of activity presents many honorable achievements and few, very few, association actions which require either extenuation or defense.

The historic city of Nashville, so entertainingly described by Local Secretary Burge in the last issue of the JOURNAL, is located at such an altitude that its normal summer temperature is less than that of many cities farther north, and unless unusual meteorological conditions prevail, the members in attendance may expect a week of quite enjoyable summer weather.

The druggists of that city, and indeed of the whole of Tennessee, have been truly indefatigable in their preparations for the occasion. No other meeting of

the Association has been better advertised among pharmacists of the whole country, or so thoroughly advertised among those of the Southern states, and it will be a matter of surprise if the attendance does not approach, or even exceed the record of past conventions.

Two new features of the convention will be the sessions of the House of Delegates and of the newly created Women's Section.

Notwithstanding the fact that much of the time of the House of Delegates was last year taken up by the consideration of matters relating to its organization, it succeeded in presenting a quite creditable report of resolutions considered. This year, with the details of organization largely out of the way, it is to be expected that the House will be able to show by the wisdom of its deliberations that it is capable of becoming a valuable constituent part of the Association.

It is the opinion of many who have studied the subject that the proper and principal function of the General Sessions of the Association should be to pass final judgment upon the questions which have been considered in detail by the smaller divisional bodies. Very often it has occurred that questions of prime importance have been introduced at these sessions, but in such incomplete or imperfect form that the Association had to choose between their adoption without due consideration or their rejection because of lack of time within which to consider them.

As expressed in the resolutions providing for its creation, the functions of the House of Delegates are:

(a) To receive and consider the reports of delegates from the bodies which they represent in the House of Delegates.

(b) To consider and report upon such resolutions, and such other subjects as shall be referred to the House of Delegates by the Council or by the Association in General Session.

(c) To act as a general committee on resolutions and to report to the Council not later than its last session a series of resolutions upon topics concerning the general welfare of the Association or concerning any features of the Association's work.

The Women's Section, although new in its creation, has already demonstrated the wisdom of its establishment by the heartiness with which the women of the Association have taken up the idea and the enthusiastic work they have bestowed upon the preparations for the first meeting.

Perhaps the main object, certainly one of the main objects of this Section, is to afford the means of placing special emphasis upon woman's work in pharmacy.

The A. Ph. A. was an early champion of the cause of women in pharmacy, and in establishing this new Section it has merely proclaimed in a formal and official manner the fact that woman's activity in this sphere is limited only by her capability and her disposition to fill the places open to her.

The program as it now stands represents the best efforts of those having its preparation in charge to harmonize conflicting claims of the different phases of the Association's work, and to give to each of the Sections and to the allied Faculties Conference and National Association of Boards of Pharmacy, the largest allotment of time possible within the week of the Convention. At least two sessions have been allotted to each section and association, this being with the understanding that if additional sessions are necessary, the officers and committees in charge will arrange them so as to cause as little disturbance as possible to the remainder of the program.

With the large number of interests to be cared for, some conflict is, of course, unavoidable, and must be endured with such philosophy as we can summon to our aid. That the members cannot, as in earlier days, attend all of the sessions, is perhaps unfortunate, but until physicists can explain how a body may occupy two or more locations in space simultaneously, no other course is possible.

J. H. BEAL.



PROGRAM OF THE SIXTY-FIRST ANNUAL CONVENTION OF THE
AMERICAN PHARMACEUTICAL ASSOCIATION,
NASHVILLE, TENN., AUG. 18-23, 1913.

MONDAY, AUGUST 18.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *National Association of Boards of Pharmacy.*
- 3:00 p. m. *First General Session of the Association.*
1. Welcoming Address.
 2. Response on behalf of the Association.
 3. Reception of Delegates from National Associations.
 4. Response on behalf of the Association.
 5. Reading of President's Address.
 6. Report of Council Proceedings in Abstract.
 7. Reports of Committees. Read by Title.
 8. Calling the Roll of States, Territories and Provinces.
 9. Recess of 10 minutes for the Selection of Representatives on the Nominating Committee. (Each state, territory, etc., is entitled to two representatives.)
 10. Reading of Names Reported for Members of the Nominating Committee. (The Nominating Committee will meet immediately after the adjournment of the General Session.)
 11. Incidental Business.
 12. Adjournment of the First General Session.
- 7:30 p. m. *First Session of the House of Delegates.*
- (The meeting is called to order by one of the officers of the preceding House, who presides until the new officers are chosen.)
1. Calling the Roll of Delegates whose credentials have been approved by the Council.
 2. Election of Officers.
 3. Appointment of Committee on Resolutions.
 4. Reading of Communications from the Council or Association.
 5. Calling the Roll of Delegations for the Reception of Reports, Resolutions and Communications.
 6. Incidental Business.
 7. Adjournment.
- 9:30 p. m. *President's Reception.*

TUESDAY, AUGUST 19.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *Second General Session of the Association.*
1. Minutes of the First General Session.
 2. Reading of Communications.
 3. Report of Committee on Nominations.
 4. Minutes of the Council.
 5. Reports of the Treasurer and General Secretary.
 6. Reports of Standing Committees.
 7. Reports of Special Committees.
 8. Incidental Business.
 9. Introduction of Members the first time in attendance at a meeting of the A. Ph. A.
 10. Adjournment.
- 2:30 p. m. *Women's Section.*
Section on Scientific Papers.
Section on Commercial Interests.
National Association of Boards of Pharmacy. (2d session.)
- 7:30 p. m. *Second Session of the House of Delegates.*
Section on Pharmacopœias and Formularies.

WEDNESDAY, AUGUST 20.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *Section on Education and Legislation.*
- 12:30 p. m. *Luncheon Reunions of College Alumni.**
- 2:30 p. m. *Section on Practical Pharmacy and Dispensing.*
Conference of Pharmaceutical Faculties.
- 6:30 p. m. *Dinner Reunions of College Alumni.*
- 8:00 p. m. *Section on Education and Legislation. (2d session.)*
Section on Commercial Interests. (2d session.)
Women's Section. (2d session.)

THURSDAY, AUGUST 21.

- 9:00 a. m. *Meeting of the Council.*
- 10:30 a. m. *Joint Session of the Section on Education and Legislation.*
Conference of Pharmaceutical Faculties, and National Association of Boards of Pharmacy.
- 2:30 p. m. *Section on Scientific Papers. (2d session.)*
Section on Practical Pharmacy and Dispensing. (2d session.)
- 4:30 p. m. *Trolley Ride over the City of Nashville.*
- 8:00 p. m. *Garden Party and Park Concert.*

FRIDAY, AUGUST 22.

- 9:00 a. m. *Meeting of the Council. (Organization for 1913-14.)*
- 10:30 a. m. *Section on Historical Pharmacy.*
Conference of Pharmaceutical Faculties. (2d session.)

*The representatives of each College are expected to make their own arrangements for time and place of meeting.

- 2:30 p. m. *Excursion to the Hermitage.*
 8:00 p. m. *Section on Historical Pharmacy. (2d session.)*
Section on Pharmacopœias and Formularies. (2d session.)
Final Session of the House of Delegates.

SATURDAY, AUGUST 23.

- 9:00 a. m. *Meeting of the Council.*
 10:30 a. m. *Final General Session of the Association.*
1. Minutes of the Second General Session.
 2. *Report of Council Proceedings.* (Including Final Report of the House of Delegates.)
 3. Installation of Officers.
 4. Incidental Business.
 5. Adjournment.



DISTINGUISHING MARKS FOR DANGEROUSLY TOXIC TABLETS.

DURING the past few months the daily press has furnished numerous accounts of serious or fatal results following the taking of tablets of mercuric chloride, usually in mistake for some comparatively simple household remedy.

With commendable diligence, the pharmaceutical and medical associations have taken up the discussion of the subject, and have offered numerous suggestions for lessening the danger; and it is well that associations should be in the lead in this matter, for if the correction of the evil be left to the vagaries of granger law makers, the chances are that some very ridiculous and inappropriate enactments will be advocated.

The suggestions made relate mainly to the giving of a distinctive character to highly toxic tablets through peculiarity of shape, striking color, or the marking of the package which contains them.

In the present issue of this Journal appear two interesting papers presented at the late meeting of the Pennsylvania Pharmaceutical Association, and both dealing with this subject.

Mr. Apple suggests, among other things, that the tablets should be coffin-shaped, and embossed with the death's-head, in addition to having characteristic color and package.

Mr. Niece, in addition to the suggestion of several unique shapes, lays particular stress upon the color, suggesting that it be green, blue, or red. He also offers some excellent advice as to the wrapping of the individual tablets and the labeling and marking of the container.

Of the various shapes proposed, the writer is inclined to favor most strongly the suggestion that they be coffin-shaped, with a design of a death's-head embossed or impressed on each tablet. This form and marking would be thoroughly distinctive, and calculated to call the attention of the most careless handler to the dangerous quality of the tablet.

The manufacture of the dies necessary to produce this form of tablet would involve no serious mechanical difficulty or material expense.

Of the colors suggested, green, blue, and red, the first two named would be preferable. While it is true that a red color is to a certain extent associated in

the public mind with danger, this applies more to the printed label and wrapper than to the substance itself. So many confections are colored red that a red color in a tablet would, in many cases, fail to arouse any thought of poisonous qualities. Either blue or green would probably answer, but would it not be advisable to take advantage of the prejudice against green already existing in the popular mind, and use this color instead of blue?

The quantity of toxic agent in a single tablet, the method of wrapping and marking the individual tablets, and of labeling the container, are likewise matters of prime importance. Combining the suggestions in the two papers referred to, the writer takes the liberty of formulating the following as a probably effective method of preventing the use of deadly substances in tablet form through mistake:

(1) To adopt the coffin-shape for the form of tablets containing highly toxic substances, each tablet to have embossed or impressed thereon the well-known death's-head. This form and emblem will appeal both to the senses of sight and touch.

(2) To color the tablets green or blue, preferably the former, with some water-soluble dye, so that when dissolved the color of the solution would arouse suspicions of its dangerous nature.

(3) To limit the amount of toxic substance in a single tablet to less than an adult poisonous dose, and thus increase the possibility of recovery if, in spite of the other warnings, a tablet should be swallowed.

(4) To wrap each tablet separately in tin-foil or paper marked in red, with the death's-head or the word *Poison*, or both.

(5) To dispense such tablets in bottles only, to which should be attached a label printed in red, bearing the word POISON, the statement that the tablets are not to be taken internally; that they should not be removed from the bottle except as used; that they should be kept apart from medicines which are used internally and, in addition, instructions for preparing and administering an antidote.

The Journal of the American Medical Association has also proposed that proper indicia for dangerous tablets should be prescribed by the U. S. P. This is a wise suggestion, and if adopted will probably do much to head off vexatious legislation by reformers who would propose impossible and unnecessary regulations.

J. H. BEAL.



THE 1913 MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE Sixty-fourth annual session of the American Medical Association held in the City of Minneapolis, June 17, 18, 19 and 20, was, in many respects, one of the most successful meetings of that Association. As foreshadowed by the previous happenings of the year, the question of medical education was a prominent subject for discussion, and the members of the medical profession seem, more than ever, convinced that the work that has been carried on in the way of raising the requirements of medical schools has not been in vain. A report of the Coun-

cit on Medical Education dealt with the subject at some length, and incidentally pointed out that during the last six years, no less than sixty-five medical schools had been closed, either outright, or by merging with other schools, and that, despite the fact that several state universities have recently established medical schools, the total number of schools existing in the United States has been reduced from 166 in 1904 to 110 in 1913.

The cost of medical teaching has of course been materially increased, and at the present time the fees paid by students represent but a fraction of the cost of the education that is being given them in the better class of medical schools. This feature of medical education was discussed at some length by George Edgar Vincent, President of the University of Minnesota, who, in his address of welcome, pointed out that:

"The number of years required for medical education and the consequent expense are in danger of limiting the area of ability from which the medical profession is recruited. To the plea that individuals have a right to a short and easy road to professional practice we may well turn a deaf ear. Here, as elsewhere, the interests of the public transcend those of the individual. A cheap medical education is the most expensive for the community. But to limit candidates for medical practice to the economically strong is a wholly different thing. There is reason to believe that men and women who might contribute much to the progress of medicine are now excluded from candidacy. A system of scholarships, maintained through private endowment, through state aid, through the cooperation of an Association like yours, might go far toward meeting this difficulty. The profession must be open to the best ability, wherever found."

He also congratulated the members of the American Medical Association on the creation and perpetuation of the professional spirit, and asserted that a man can be himself only as he lives the life of cooperation and comradeship.

"A profession is a collective personality. Each individual makes contribution to the whole, it is true, but the materials and the inspiration for his own development, are drawn from the common store. Only as men have the imagination to see their lives in their wider relationships, only as they lose their petty personal interests in larger and more generous common purposes, can they attain the true possibility of personal growth."

The work of the sections was, as usual, comprehensive, and the official programme alone includes a total of 168 8-vo. pages, each of the fifteen sections of the Association being represented by from fifteen to forty communications.

The Section on Pharmacology and Therapeutics, which deals more directly with subjects of interest to pharmacists, discussed in five sessions no less than thirty communications, all of them interesting, and some of them, at least, designed to arouse more than passing interest. The address of the Chairman of the Section, Dr. Ray L. Wilbur, of San Francisco, was devoted to a discussion on the teaching of therapeutics from a practical point of view, and will, no doubt, go far towards arousing interest in this, at the present time somewhat neglected, feature of medical education. Prof. Joseph P. Remington, as Chairman of the delegation from the American Pharmaceutical Association, presented felicitations and commented at some length on the progress made in the revision of the Pharmacopœia of the United States. The question of scope being touched upon, Dr.

Torald Sollmann, of Cleveland, offered the following resolution, which, after some discussion, was adopted and referred to the House of Delegates:

WHEREAS, It is desirable that the articles officialized by the Pharmacopœia of the United States should reflect the progress of therapeutics; and

WHEREAS, Therefore the inclusion of articles in the Pharmacopœia now in progress of revision should be determined by their therapeutic merit; and

WHEREAS, The decision of therapeutic questions should logically and in fairness be left mainly to the medical members of the Revision Committee; therefore, be it

Resolved, That the section request the House of Delegates of the American Medical Association to urge on the Committee of Revision of the Pharmacopœia of the United States that the selection of articles to be included be left to the Committee on Scope, in which the medical profession has a majority representation, rather than to the Executive Committee, which represents mainly the pharmaceutical profession, and which has overridden half the changes advocated by the Committee on Scope."

The question of the purity of drugs as they reach the patient was discussed at some length in a paper by W. A. Puckner on the quality of drugs sold to dispensing physicians, and in a paper by M. I. Wilbert on carelessness in the pharmacy as a reason for restricting materia medica. Dr. Torald Sollmann, of Cleveland, also read a paper entitled: "Yesterday, Today and Tomorrow: The Activities of the Council on Pharmacy and Chemistry," in which he outlined some of the efforts that are being made by the Council to improve on the nature of medications used in the treatment of disease. The following resolution was adopted by the Section and later concurred in by the House of Delegates:

"WHEREAS, It has been repeatedly shown by the Council on Pharmacy and Chemistry, and by the Chemical Laboratory of the A. M. A., as well as by other investigators, that many drugs and preparations used in the treatment of disease are of unreliable composition, through carelessness, negligence, ignorance and other reasons; and

WHEREAS, This condition of affairs is against the interests of public health and the progress of the science of medicine; therefore it is evident that greater activity is needed in the enforcement of existing laws relating to drugs and medicines; therefore, be it

Resolved, That the Section on Pharmacology and Therapeutics requests the House of Delegates of the A. M. A. to bring this matter to the attention of the proper federal and state authorities, and urge on them the need for more energetic and effective action in this direction."

The remaining papers of the Section on Pharmacology and Therapeutics were largely devoted to discussions on practical therapeutic problems, and the sessions on the morning of Wednesday, June 18, to the morning of Thursday, June 19, were devoted essentially to symposia on practical therapeutics. A joint meeting with the Section on Practice of Medicine on the afternoon of Wednesday, June 18, was devoted to a symposium on serums and vaccines, the practical results of which should go far toward clearing up our present day opinions regarding the possibilities and limitations of these products. The concluding session of the Section on Thursday, June 19, was devoted to a symposium on physical therapeutics. The papers presented at this symposium were conservative in character and

were generally appreciated as being valuable because of their outlining in a practical way the possibilities and limitations of the various physical therapeutic agents that were discussed.

The officers of the Section on Pharmacology and Therapeutics for 1913-14 are: Chairman, J. F. Anderson, Washington, D. C.; Vice Chairman, Robert Hatcher, New York; Secretary, M. I. Wilbert, Washington, D. C.; Delegate, Ray L. Wilbur, San Francisco, Cal.; Alternate, Reid Hunt, Washington, D. C.

Members of the pharmaceutical profession who are interested in the comprehensive nature of the proceedings of the American Medical Association are referred for further details to the *Journal of the American Medical Association* for June 21, pages 1962-1966; June 28, pages 2052-2053, 2075-2096; July 5, pages 28-40.

Dr. Victor C. Vaughan, of the University of Michigan, Ann Arbor, Michigan, was selected as the President-elect of the American Medical Association, and the next meeting of the Association will be held in Atlantic City in June, 1914.

M. I. WILBERT.



THE SCOPE OF THE PHARMACOPŒIA.

NOT the least puzzling of the many puzzling tasks which come to the Committee of Revision is that of determining the list of medicaments which are to be admitted to the Pharmacopœia. No matter what may be admitted or what excluded, there will be some who will disagree with the Committee's conclusions.

There is probably not a single agent in the Pharmacopœia that has not been condemned by some medical authority as either useless or dangerous, while, on the other hand, there are hundreds of non-pharmacopœial drugs which have admirers who claim for them the highest therapeutic value. These differences of opinion, of course, grow out of the fact that therapeutics is not an exact science, and therefore that the measure of value of a medicinal substance is to a large extent a matter of opinion. If this were not true, we would not so often see therapeutists of equal ability and considerable professional reputation disagreeing totally as to the merits of a particular drug, one vigorously asserting it to be invaluable in the treatment of a certain class of cases, and another insisting with equal vehemence that it has no value at all, or is too dangerous to be used.

It is true that we can measure the toxic value of drugs by laboratory experiments on animals, but it does not necessarily follow that the measure of toxicity is a measure of their therapeutic usefulness, though the therapeutic action and toxic action may be the same in quality and kind.

A striking illustration of the different conclusions which may be drawn from laboratory experiments and from clinical experience is shown in a paper recently published in this *Journal** in which, in reply to questions addressed to over 40,000 physicians as to the value of the vegetable drugs employed by them, it appears that a large majority of the voters placed at or near the head of the list of the agents from which they derived the best results in practice certain drugs which laboratory workers had previously declared to be without any value whatever.

*Vegetable Drugs Employed by American Physicians, *Journal A. Ph. A.*, Nov., 1912, p. 1228

Whom should we follow in such cases? The workers who base their opinions upon the results observed when the drugs are administered to frogs, cats and guinea pigs, or the thousands of practitioners whose opinions are the result of bedside clinical experience?

The laboratory experimenter may be right; we do not know. This is not a question that can be decided offhand. The practical question which confronts the Committee of Revision is, whether they shall follow the opinions of the few who decry the value of a drug, or the opinions of the many who declare it to be of value.

That we must make choice between contending opinions is evident; for if every drug that is approved by some practitioners be admitted, the Pharmacopœia would be so large as to tax muscular effort in handling it, while if everything be excluded which has been severely condemned by certain practitioners, the table of contents would be represented by zero.

An additional element of confusion is introduced by the fact that it has apparently never been definitely settled whether the Pharmacopœia is primarily intended for the guidance of the physician in the selection of therapeutic agents or for the guidance of the pharmacist in the selection and preparation of the agents ordered by the physician, i. e., whether it is primarily a therapeutic guide or a pharmaceutic guide. There are some things to be said on both sides of the question.

Among the arguments which may be offered in favor of the theory that the Pharmacopœia is to be recognized as a guide to pharmacists in compounding and dispensing rather than for the purpose of directing the physician in the selection of therapeutic agents are the following:

(1) Notwithstanding the fact that the movement which resulted in the creation of the U. S. P. originated with the medical profession, an examination of the first edition of that work and of the medical literature of that date will show that physicians did not have it in mind to establish a book that would tell them what therapeutic agents to use, but one which would provide standards of purity, strength and certainty for the agents concerning whose value they were already satisfied.

(2) The book is practically unknown in physician's offices, and their knowledge of what it contains is confined mainly to what they have learned of it from the dispensaries, or other privately published works.

(3) The book makes no statement regarding the physiological properties of drugs or their therapeutic uses, except that it calls attention to the dangerously poisonous properties of certain substances, and gives a formula for arsenic antidote. No one, from reading the pharmacopœial description alone, could determine for what a drug was intended.

(4) An examination of the Pharmacopœia will show that 99 percent or more of the text relates to matters of pharmaceutic interest only, as methods of manufacturing, assaying, identifying and dispensing of drugs, and that practically none of it, except statements of doses, is of interest to those who prescribe medicines. In fact, most of the text is of such a technical nature that it is unintelli-

gible to those who have not been specially trained in the subjects of the pharmaceutical curriculum.

(5) Physicians have not been in the habit of accepting the Pharmacopœia as a guide in the selection of therapeutic agents, and one of the most common complaints of the day is that physicians persistently prescribe and use advertised proprietary preparations in preference to their non-advertised pharmacopœial equivalents.

In view of this disposition of physicians to prescribe non-pharmacopœial remedies, the charge that the tendency to a comprehensive Pharmacopœia is dictated by commercial considerations is strangely inapplicable. Instead of increasing the use of a remedy by including it in the Pharmacopœia, it apparently has exactly the contrary effect. As soon as its formula and method of preparation are open to everybody, no one is particularly interested in exploiting it, and its popularity begins to wane. This is because physicians are made out of the same kind of human material as are those who pursue other vocations. When a physician gets an attractively printed circular exploiting a given drug or preparation, accompanied by clinical reports (i. e., testimonials of other physicians who have used it), he is impressed accordingly, and prescribes it in preference to its non-advertised official equivalent or substitute.

These preliminary considerations bring us back to the main question, "What shall go into the Pharmacopœia, and what shall be omitted?"

It should go without saying that every agent admitted into the Pharmacopœia should be valuable and reliable, and also that the medical profession should select the remedies to be included, but since physicians do not and apparently cannot agree among themselves, and since there is no known method by which therapeutic value and reliability can be definitely established, there is no alternative but to rely upon the extent to which the remedies are used by the medical profession as a whole as a criterion by which to determine their exclusion or admission.

Within the past few days the writer submitted to a prominent city practitioner a recently published list of drugs recommended for deletion by an eminent pharmacologist. The criticism of the practitioner was both severe and caustic. Referring to certain of the condemned drugs, he said, "I have used these in my practice constantly for years. I would not know how to practice medicine without them. Am I to reject the evidence of my own senses in favor of the opinion of one who has not had one-quarter of the clinical experience I have had? If you want to make a book for the theorists do so, but the practical men in the profession will have no use for it."

Confronted by such perplexing differences of opinion, the Committee of Revision have wisely refused to be limited by the judgment of any particular school or sect, and have chosen to be guided rather by the extent to which a given agent is prescribed by the profession at large. If a given remedy or preparation is frequently used in many sections or in some important section of the country, it has been admitted to the Pharmacopœia; if it is used only rarely, it has been denied admission.

Should the Committee of Revision restrict the list of remedies as greatly as

some would have them do, they might justly be charged with attempting to "dictate to physicians what drugs they shall use," but by admitting all of those which are used and believed in to any considerable extent, they are offering to the medical profession the greatest possible freedom of choice.

If the Pharmacopœia provides proper standards for the favorite drugs of one school or class of physicians, I can see no reason why the latter should object to recognition being given to the favorite drugs and remedies of other classes of physicians.

The liberty of choice of those who believe in a restricted materia medica is exactly the same as it was before the substance was admitted. In other words, such a method of selection results in providing a list wherein the greatest number of physicians are able to find the remedies of their choice, if they desire to use the unadvertised official remedies in preference to the advertised proprietary ones.

On the whole, therefore, it would appear that the Revision Committee is acting wisely when it chooses to admit to the Pharmacopœia every drug which is frequently used by any considerable body of physicians, even though there be other physicians who do not use these drugs in their own practice, and who condemn their use by others.

J. H. BEAL.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

IMPROVED METHOD OF PREPARING CAMPHOR LINIMENT.

OTTO RAUBENHEIMER, PH. G., BROOKLYN, N. Y.

This subject might be called an "old chestnut," having been iterated and reiterated before numerous pharmaceutical meetings. Nevertheless, it is very important, and inasmuch as the proposed process is very simple and does not seem to be generally followed, therefore the writer asks for your attention during a few minutes.

We are all familiar with the present U. S. P. formula and process for "*Lini-mentum Camphorac*," namely, "Introduce 200 gm. of Camphor, in coarse powder, and 800 gm. of Cottonseed Oil into a suitable flask, and apply a gentle heat, by means of a water bath, loosely stoppering the flask during the operation. Agitate the flask occasionally until the camphor is dissolved."

This, of course, should produce a Camphorated Oil containing 20 percent of camphor, and it undoubtedly will, provided the *modus operandi* is carried out carefully. Unfortunately, however, not all druggists are as careful as they should be, and cases have even come to the attention of the writer when oil and camphor were heated in an open dish or were put in a tin can on a hot stove.

Camphor Liniment has been the cause of more prosecutions by health boards and pharmacy boards than any other galenical. Shrewd lawyers have made the defense that in the official process, i. e., the heat of a water bath some of the camphor is bound to evaporate. And strange to say, judges have sustained this plea, even in cases when the preparation in question only contained 12 instead of 20 percent of camphor.

One of the quickest and simplest processes is circulatory displacement, by which the camphor is dissolved in a few hours, f. i., by setting aside over night. No doubt this process is used extensively by pharmacists all over the United States, including the writer, who has always advocated this simple method, which requires no further attention and above all, which requires no heat.

In the present revision of the U. S. P., Prof. Chas. F. Nixon, of Leominster, Mass., has recommended the process of percolation as follows: "Reduce the camphor to a coarse powder, and put it in a narrow glass percolator in which a layer of absorbent cotton has been placed. Pour on the oil till the camphor is covered and when the percolate begins to drop close the lower orifice and allow to stand for 12 hours. Then percolate slowly till the required quantity is obtained."

Prof. Nixon justly claims that this simple process can be carried out in every

pharmacy having a percolator, and the writer wants to add that in order to deserve the name of a pharmacy, not only one but several percolators should be there and should be used. It is evident that in this cold process there can be no loss of camphor by evaporation, as the same is dissolved before the required quantity of oil has passed.

From numerous experiments I can fully recommend the percolation process and the object of this paper is to make this process better known. I want to add further that the cotton in the percolator will also act as a filtering medium and that the resulting preparation will be perfectly clear. As oil attacks rubber, the use of the rubber tube as advised in the official percolation process is impracticable. I find that an ordinary sprinkler stopper with which the flow can be regulated, works satisfactorily. The finer the camphor is the more quickly will it dissolve, but even when coarsely cut it will be dissolved before all the oil is used up.

Upon inquiry, I find that this very simple method of preparing camphor liniment, does not seem to be known much by the pharmacist, very likely on account of its simplicity.

I might also suggest a modification of this process, namely, a combination of percolation and circulatory displacement by inserting a metal sieve, *f. i.*, a coffee or tea strainer, into the percolator several inches above the plug of cotton. By the use of this method it is not necessary to reduce the camphor to a coarse powder, as small pieces will dissolve by circulatory displacement, and the finished product can be drawn off through the stopper after having been filtered by passing through the cotton.

Last, but not least, I much prefer oil of sesamum to cottonseed oil, it being less sticky and gummy and being better absorbed. On the advantages of oil of sesamum over cottonseed oil I have written a number of papers and trust that the former will replace the latter in some of the U. S. P. preparations.

I advise pharmacists to give the percolation process or the "combined" process a trial and be convinced of its simplicity, and furthermore, of its effectiveness in obtaining a full strength camphor liniment, and thus run no risk of being prosecuted by the authorities.

DISCUSSION.

Mr. Jones, discussing this paper, said that he was accustomed to use the circulatory process, but used a glass jar that Spearmint gum came in, with a glass cover. He spread over the top of the jar a piece of gauze, placing on the gauze his powdered camphor and placing over that gauze the glass cover to fasten it. In the winter-time, when he was running a radiator, he placed it on the radiator. He found this a very simple and satisfactory process.

Mr. S. K. Sass, of Chicago, said he was in favor of percolation. A percolator was a thing to be found in almost every pharmacy; and where one was not found, it could hardly be called a pharmacy. But it was not every pharmacy that would have such a cover for a Spearmint jar, or some device of that sort. He believed that percolation was better, though he thought the process in the Pharmacopoeia was not bad. He dissolved his camphor in a can, which was loosely corked, and he thought no more camphor was lost in this way than by making it by any other process. In the case mentioned, where there were only 12 drams of camphor to 100 of the liniment, he thought the deficiency must have been intentional.

SOME PHARMACEUTICAL NOTES.

WM. R. WHITE, PH. C., NASHVILLE, TENN.

U. S. P. Elix. Phosphate, Iron, Quinine and Strychnine.—Three samples were kept for four months, exposed to ordinary light of laboratory and the change in colors observed. No. 1, made by U. S. P. method, changed to a light brown color. No. 2, with 4 gr. carbonate potash to each ounce, changed to dark brown. No. 3, with 4 m. hydrochloric acid to each ounce, remained unchanged.

Tinct. Opium Deodorized.—I much prefer to use paraffin as a deodorant instead of purified petroleum benzin. I have found it be both convenient and reliable. The disagreeable odor of the benzin and the danger of an explosion from the ignition of the vapors are both avoided. About 70 gm. of paraffin to a litre of tincture is sufficient. The paraffin should be melted and added to the hot evaporated aqueous extract, stirred well, allowed to remain over night and then removed in a solid cake. In assaying the tincture made by this method, I have noticed that the morphine is remarkably white and pure.

Tinct. Opium Camphorated.—No good reason can be seen for making this from granulated opium and having to wait three days for it to macerate, when it can be made in a very short time by using an equivalent amount of tincture of opium.

By dissolving the benzoic acid, camphor and oil of anise in about 10 percent of the alcohol, and adding this gradually, with stirring, to a mixture of a greater part of the dilute alcohol, the tincture of opium and the glycerin, and then adding gradually an amount of water equal to the alcohol used at first and finally adding dilute alcohol in quantity sufficient, and filtering, an excellent tincture can be made in a very short time.

Tincture of Iodine.—Mr. E. A. Geyer's method (see Bul. Pharm., vol. XXVI, p. 167), of making this tincture by pouring the alcohol on the iodine and potassium iodide, which have been placed on a pledget of cotton in a glass funnel and collecting the percolate in a graduated bottle, is one which I can commend very highly as being a great improvement over the U. S. P. method. I have found it best, however, to rub the potassium iodide to a very fine powder, as it will be necessary to return the percolate to the funnel again if the granular salt is used.

Sweet Spirit of Nitre.—In making this from the concentrated ether, I have found that with some samples of alcohol a very red color would immediately appear, but after standing about 12 hours would resume its natural color again. I attribute this to a small amount of tannin in the alcohol, which is sometimes dissolved from the barrel.

Color in Fresh Lemon Peel.—After extracting practically all the color from some fresh lemon peels with alcohol, some lime water was added to the mixture. Almost immediately the solution was colored a brilliant yellow color. The peels, which were very brittle and almost white when taken from the alcohol, had also changed to a yellow color.

Ammonia, sodium hydroxide, potassium hydroxide, potassium carbonate and

other alkalis all gave the same result. The addition of acids to the alkaline solution or to the alcoholic tincture completely destroyed all color, but the addition of an excess of alkali restored it again.

Some of this coloring principle was obtained by evaporating an ammoniacal solution of this yellow color on a water bath. It was a brownish resinous substance, insoluble in alcohol, ether, or chloroform, but completely soluble in water or in dilute alcohol.

The dried peel also yields its color to alkalis, but the color is a browner shade.

Boiling the solution had no effect on the color.

By taking advantage of this fact these rejected lemon peels can be used very profitably as a coloring for aqueous, alkaline and hydro-alcoholic solutions.

Camphor Liniment.—By powdering the camphor, putting it in a cheese cloth bag, and suspending this in the cotton seed oil, stoppering the bottle and shaking at intervals for two or three days, an excellent preparation can be made which is strictly U. S. P. There is no chance of losing the camphor by volatilization as in the U. S. P. method.

THE DRUDGERY OF THE DRUGGERY.

The grocer, the butcher and the general stores close at 6 o'clock and no Sunday work. Has it occurred to you that we, among all trades, workers and professions, are keeping our stores open fifteen to sixteen hours a day and desecrate the Sabbath under the cloak of necessity? We have become slaves to our business, no time for recreation, no time for druggists' meetings, not even time, I am told to take off the wrapper from the drug journals to absorb the information that may turn the tide of prosperity our way.

Commercial side lines are pointed to as the remedy and they, no doubt, are doing great things for some of us in a financial way and I believe in stocking them to the limit, but the fact of our becoming pirates on other lines to continue the practice of our profession is at most a poor substitute for the profit we should get on our own lines.

The remedy is this: Get together; support our organizations as we should, both financially and morally. We have them with officers who sacrifice time and money to better conditions for you. Why is it necessary that a few faithful should be obliged to uphold them? Why is it necessary that the traveler who receives no direct benefit therefrom should be called upon to support your organizations that are for your benefit, for your advancement alone? Have we no pride, no shame, no manhood?

The mechanic and the laborer contribute more per capita to the support of their organizations than we would if we joined the National Association of Retail Druggists, American Pharmaceutical Association, and our state and local associations.—*Richard T. Merring.*

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

THE ENFORCEMENT OF LAWS RELATING TO THE PUBLIC HEALTH.

J. H. BEAL, SCIO, OHIO.

The principal laws which may be grouped under the above head are as follows:

1. General laws relating to sanitation, protection of water supply, quarantine against contagious diseases, etc., usually enforced by a commission of physicians known as the State Board of Health.

2. Laws regulating admission to the practice of medicine, pharmacy and dentistry, the enforcement of which is in the hands of boards or commissions known by various titles. We may also include in this class the laws regulating undertaking, and veterinary medicine.

3. Laws which relate to the adulteration of foods, beverages and drugs, the method of enforcement of which is various. In some cases their enforcement is in the hands of the board of health; in some cases, especially as relates to drugs, in the hands of the State Board of Pharmacy; and in still other cases in the hands of a special food and drug commissioner.

In the enactment of these laws there has generally been much contention as to the authorities to which their execution should be entrusted. Physicians, pharmacists, dentists, etc., have each insisted that the body of laws relating to their respective vocations should be administered by officials who are members of such professions, and each profession has been jealous of an interference with its so-called rights by any of the other professions.

If the laws regulating these various vocations were enacted solely for the benefit of the vocations concerned, then these contentions might be valid. As a matter of fact, however, the only justification that can be alleged for the legal regulation of any calling is the necessity of protecting the general public welfare; and unless this end is attained by the existence of the law it is vicious only. Since the general good is the sole excuse for these laws, the method of enforcement should be such as will be most economical, speedy, impartial and effective. Their execution divided as it now is among a number of different boards and commissions lacks most if not all of the foregoing qualities.

There is not a state wherein the laws regulating the practice of medicine, pharmacy and dentistry are not constantly being violated, and apparently with impunity. The members of the respective professions who comply with the legal requirements are burdened by various special fees and taxes, while those who

disregard them are free from such burdens. In other words, the law-abiding members of the profession are at a distinct disadvantage as compared to the outlaws, a situation which always tends to increase the number of outlaws and to decrease the number of those who comply with the law.

Druggists, as a rule, have been inclined to insist that the laws providing penalties for the sale of impure and adulterated drugs shall be administered by the board of pharmacy, the members of which are usually required to be men actually engaged in the drug business. Similarly the farmers have been inclined to insist that the board or commission charged with enforcing the law against the adulteration of foods shall be selected from the agricultural class because foods are agricultural products.

If these concessions be made to druggists and farmers why should they not equally be made to every other class of men whose business is the subject of legal regulation?

As a practical method of securing efficiency, impartiality and economy in administration I suggest the following:

That the state boards of health, medicine, pharmacy, dentistry, etc., be replaced in each state by one general board composed of one or more representatives from each of the professions, each of whom shall devote his whole time to the duties of his office, and that to this general board or commission there be entrusted the administration and enforcement of all of the laws relating to sanitation, admission to the practice of pharmacy, medicine and dentistry, adulteration and misbranding of foods and drugs, and prosecutions for the violation of any of these acts.

Naturally the inspectors, chemists, etc., upon whose recommendations and testimony prosecutions were begun would be men specially trained and experienced in their respective subjects, and therefore not likely to recommend prosecutions for frivolous or merely technical causes, but I contend that the prosecutions themselves should be directed by men whose personal interests would not be affected by the result of such prosecutions.

This general board should also have the authority to appoint committees of expert examiners to test the fitness of candidates for admission to practice, and upon the report of these special examiners the general board should issue the license or certificate of registration.

Some of the results which might be expected to follow such a change in the methods of administration are:

1. The very much greater economy—in proportion to the work accomplished—of one board of five to seven members as compared to four or five boards each having five or more members.

2. The better correlation of the laws and methods of administration.

3. The greater likelihood that the law would be impartially and rigidly enforced for the general public benefit.

The jealousy of each one of the branches of medicine of interference by another is such that an attempt to consolidate the various boards under one heading would no doubt be fiercely resisted. In the long run, however, I believe it would be to the distinct advantage of all of the branches of medicine if such a consoli-

dation and concentration of effort could be made, and that it would be the part of wisdom for us to lay aside our petty contentions and to work for this reform.

The foregoing suggestions are not offered with the idea that they will be favorably received by the present generation, but simply as the outgrowth of the writer's experience and observation.

DISCUSSION.

Dr. Albert Schneider, of San Francisco, stated that he approved most heartily of the remarks made by Mr. Beal, from a theoretical standpoint. He certainly approved of the centralization of power. If he had his own way about it, he would centralize all that in himself. It had been demonstrated in actual practice that it would not often do to attempt to administer the pure food and drug laws under one head. In California they were administered by the State Board of Health, and they had found it fairly satisfactory, for the reason that the doctors there were very fine men, "the best in the United States," were interested in the health of the state, and were doing most excellent work. But, unfortunately, they knew little about the purity of drugs.

Dr. H. H. Rusby, of New York City, said he approved of Mr. Beal's paper from a practical point of view, and believed it was the only practical way the thing could be worked out; and he wishes to add that he believed every municipality, every town, should have its own board to cooperate with the State Board, or they would not accomplish anything. The agitation must be kept going until the people in the neighborhood became interested enough to have their cow-stables cleaned and free from disease germs, and their ice cream of a suitable character.

SOME REFLECTIONS CONCERNING LEGAL AND MORAL STANDARDS.

WILHELM BODEMANN.

This is the age of specialization—and yet, as I undertake to write you a few remarks on legislation I find that some legislative work is a veritable campaign of education, and branches into commercial channels also. I am driven to the conclusion that the efforts to maintain living prices may as well be abandoned, there is too much lack of decision and cohesion in our ranks, even some of the so-called leaders preach maintenance of prices and practice "cutting." But there is one legislative stunt that can be tried that will and must result in better prices and diminish cutting; as it is the honest man suffers, the dishonest man rakes in the business and decent pharmacy is put to shame. The great A. Ph. A. should leave no effort untried to place the testing of drugs and pharmaceutical products with competent and independent Food and Drug Commissions, and change the Pharmacy Laws accordingly. One instance may suffice: Solution of magnesium citrate in larger cities is cut to 15 and 20 cents per bottle. It cannot be prepared according to U. S. P. to be sold at that price. But it is sold at that price, and made from magnesium sulphate, ordinary epsom salt!!

Some of our larger cities are cursed with a heavy percentage of druggists whose regard for the orthodox and antique creed of honesty and decency is absolutely nil—a class of undesirables who consider it smart and up-to-date to beat a competitor by ways that are mean and tricks that are dark! If this class of

"outlaws" could be made "inlaws" by compelling U. S. P. standards, cutting on many products would be stopped at once. This applies to spirit of camphor, tincture of iodine and similar products, cut by the "Cheap Johns" in proportion to the percentage of adulteration. Many of our Boards know of these things, but either are not equipped with the Laboratory to test products, or are not equipped with the ability, or lack courage to enforce the law. And we all agree that an *unenforced law is worse than none*. Now see where the commercial result of this shift to an energetic Food Commissioner, independent of commercial connections, would land. It would compel these cheap "Calico Johns" to come up to decent prices, and remove from the honest, law-abiding pharmacist the stigma of overcharging his patrons for full standard goods. I would therefore urge the A. Ph. A. to join hands with the various State Associations, the N. A. R. D., and the various Medical Boards to put the U. S. P. standard up as a goal, and put it up to stay!!

Talking about standard brings back to my mind the cry I have listened to for these many years, "Raise the Standard."

Our City Schools have just closed for the summer vacation, and a bunch of eighth-grade boy graduates presented themselves for work. I let them do some figuring, and here is a fair example: What does a box of 50 cigars cost me at \$75.00 per thousand, 5 and 3 off? One boy threw up the sponge after ten hard trials. Nine boys figured out the net price higher than the list price. Now what can you do with such a set of hopeless cripples? What earthly good can a diploma from such schools do when such boys can demand recognition of their parchment! Our schools need touching from bottom up; there is too much attention to branches and to little to roots! That's the curse! Such pharmaceutical cripples (adopting the Searby nomenclature) are a danger to the professional side of pharmacy and an equally great danger to the commercial side, because such a Stoughton Bottle will not know when he is selling goods at a loss, and at the close of my paper I am again at the starting point, when I say that in spite of specialization, commercial, educational and legislative standards, all run into *one* channel, the great river of enlightened honesty and decency.

THE JUDGMENT OF THE MAJORITY.

The benefactors of humanity have paid a heavy penalty to Ignorance for the privilege of helping the world along.

We have cluttered the avenues of progress with incredulity—we have heaped discouragement upon the head of every adventurer who went prospecting into the Hills of Chance.

Had advancement been regulated by the judgment of the majority, we would now be luxuriating in the comforts and conveniences of the pre-Arthurian period—the Twentieth Century would be a thousand years overdue—we would continue to celebrate new thought with human bonfires, and the prevailing religion would be the worship of the golden ass.—*Herbert Kaufman*.

Contributed and Selected

A LAST PLEA FOR A USEFUL PHARMACOPOEIA.*

OLIVER T. OSBORNE, M. D., PROFESSOR OF THERAPEUTICS AT YALE MEDICAL SCHOOL,
NEW HAVEN, CONN.

Shall we have the United States Pharmacopœia up to date and of scientific and therapeutic value, or shall it be a book of ancient drug lore intermixed with drugs of real value?

It is now nearly three years since the Pharmacopœial Convention of 1910, and what has been accomplished? Many of the drugs which have been approved have already been announced, and, as it has wisely been determined that a subject of such wide, almost universal, interest as the United States Pharmacopœia should not be made a secret affair—in other words, that its decisions should be public, what follows is not a breach of confidence. The subject, in every detail, is one of public interest, and, therefore should be of public knowledge.

In this age of exposure of "patent-medicine" frauds, and the age of education as to the danger of some drugs, the uselessness of others, and the limitations of all, the people have a right to expect that the next Pharmacopœia will be a book that can be relied on as a standard of purity and of chemical and pharmaceutical perfection in all its drugs and preparations. They have a right to expect that this book will represent the drugs found by medical experts to be of the best therapeutic value at this date, namely, 1913 A. D.

Can there be any other guide for the acceptance of a drug or preparation for officialization in an up-to-date book of this age than that:

1. The drug must have therapeutic value.
2. The drug must be pure.
3. The preparations must be the best.

What, then, determines the best drug? Investigations in the laboratory and clinical experience—and almost every drug that is known to have clinical value shows laboratory activity. If a drug has no activities, or only dangerous activities when used on animals in the laboratory, it is not a drug that should be dignified by recognition in a 1913 book of standard valuable drugs.

Selection of Drugs for the Pharmacopœia.—At the convention in 1910 it was stated that the selection of drugs was peculiarly the duty of physicians, while the selection or determination as to which were the best preparations, and how they should be made, was the duty of the pharmacist. How has this been lived up to?

In the first place, fifty members of the Pharmacopœial Convention were elected a Committee on Revision. Of these fifty, only six are practicing physicians;

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i. e., only six members of this Committee on Revision are qualified to judge at the bedside of the value of the action of a drug, although several members are medical laboratory men and are well qualified to decide on the activities of drugs.

Next, through the stimulation of various agencies, many of the medical societies of the country appointed special committees who prepared lists of drugs they considered valuable, and of drugs they considered should be omitted from the next Pharmacopœia. These lists, in due time, reached the office of the Chairman of the Committee on Revision, Professor Remington, and he, at great office trouble and considerable expense, circularized these lists to the Committee of Fifty.

To show how helpful these lists of drugs were, I will quote the opinion of one member of the Revision Committee, not a physician, concerning them, which was circulated to all of the members of the committee. This circularized opinion (*italics mine*) is as follows:

"The Revision Committee may wisely forget about nine-tenths of the well-meant advice which has come to it thankful for the interest shown by an increasing number of physicians."

How many other members of the Committee on Revision agreed with this opinion I am not able to state, but the outcome of the present list of accepted drugs and preparations for the next Pharmacopœia shows that the Executive Committee, the committee of final decision as to what drugs shall appear in the next Pharmacopœia, did not care an iota what drugs these medical societies approved or what they disapproved. In other words, little if any notice was taken of these lists so carefully prepared by some of the medical societies of the country. Those who prepared these lists should know this fact.

The approval by the Executive Committee of drugs of no therapeutic value and their consequent officialization causes them, of necessity, to be described in text-books on materia medica and consequently to be used by physicians. A study of 117,000 prescriptions collected from different parts of the United States showed the number of times therapeutically useless drugs were ordered. The data thus obtained has been used as an excuse for officializing these drugs in the next Pharmacopœia. These will again be copied and described in materia medica books, and the next graduates in medicine will again prescribe these drugs, and the vicious cycle will persist.

A Subcommittee on Scope voted on the drugs of the last Pharmacopœia, as to whether they should be accepted for the next Pharmacopœia or whether they should be omitted. The chairman of this committee dissolved favorably to admission a large number (65) of tied votes. These lists of acceptances and deletions were then sent to the Executive Committee. The Executive Committee is the court of last appeal, and consists of the chairmen of the different subcommittees, fifteen in number. This committee has the power of approving or overruling any decision of the Subcommittee on Scope, and exercised this power liberally. It also did not hesitate to admit some preparations that had never even had the formality of a vote by the Subcommittee on Scope.

Personnel of Committees.—Now, who are these members, elected from the convention by accredited delegates from the medical societies, medical colleges, pharmaceutical societies, pharmaceutical colleges and from several departments

of the Government of the United States? For our purpose it is not now necessary to enumerate all the members of the Committee on Revision, but only those who constitute the Subcommittee on Scope, and those who constitute the Executive Committee, namely, the chairman of the fifteen subcommittees.

The Subcommittee on Scope consists of:

<i>Name.</i>	<i>Position Held.</i>
S. Solis-Cohen, M.D., Chairman.....	Prof. Clin. Med., Medico-Chi. College.
Reid Hunt, M.D.....	In Hygienic Laboratory, U. S. P. H. S.
Philip Marvel, M.D.....	Practicing physician; Trustee A. M. A.
O. T. Osborne, M.D.....	Prof. Therapeutics, Yale University.
H. H. Rusby, M.D.....	Pharmacologist; Prof., N. Y. College Pharmacy.
Torald Sollmann, M.D.....	Prof. Pharmacology, Western Reserve University.
H. C. Wood, Jr., M.D.....	Pharmacologist; Prof. Pharmacology and Thera., Medico-Chi. College.

The Executive Committee consists of:

S. Solis-Cohen, M.D.....	Prof. Clin. Med., Medico-Chi. College.
Torald Sollmann, M.D.....	Prof. Pharmacology, Western Reserve University.
J. F. Anderson, M.D.....	Hygienic Laboratory, U. S. P. H. S., Washington.
Henry Kraemer, Ph.D.....	Prof. Botany, Philadelphia College of Pharmacy.
Charles H. LaWall, Ph.D.....	Pharmacist and consulting chemist; Prof. Philadelphia College of Pharmacy.
George D. Rosengarten, Ph.D....	Chemist of Powers-Weightman-Rosengarten Co., Mfg. Chemists.
A. D. Stevens, Ph.D.....	Pharmacist; Prof. Se. Pharm., University of Michigan.
H. W. Wiley, M.D., Ph.D.....	Chemist; Ex-Chief U. S. Bureau of Chemistry.
G. M. Beringer, Ph.M.....	Pharmacist in retail business.
C. L. Diehl, Ph.M.....	Pharmacist (retired); Emeritus Prof., Louisville College of Pharmacy.
W. C. Alpers, Sc.D.....	Pharmacist in retail business.
Otto Raubenheimer, Ph.G.....	Pharmacist in retail business; Editor <i>Practical Druggist</i> .
Wilhelm Bodemann, Ph.G.....	Pharmacist in retail business.
A. B. Lyons, A.B., M.D.....	Pharm. Chem., with Nelson, Baker & Co., Mfg. Chem.
Chas. Caspari, Jr., Phar. D.....	Pharmacist; Prof. University of Maryland.; Commissioner, Maryland State Board of Health.

Of this "court of last resort" there is one physician who practices at the bedside (Dr. Solis-Cohen), one who is a medical laboratory expert on the activities of drugs (Dr. Sollmann), one who is a drug laboratory expert at the Hygienic Laboratory (Dr. Anderson), and one who is a food and drug expert (Dr. Wiley); the other eleven are interested in some branch of pharmacy. These facts in conjunction with the way some, at least, of the pharmacal members look on recommendations of the medical men will show how much in evidence was the axiom that "physicians should decide what drugs should enter the Pharmacopœia."

At this date the new Pharmacopœia will contain at least 845 drugs and preparations. About half of these are not needed. One hundred and fifty-eight drugs and preparations were recommended for omission from the last Pharmacopœia by the Subcommittee on Scope. Just half of these, namely, seventy-nine, were voted in by the executive committee over the adverse recommendation of the Subcommittee on Scope, and it should be remembered that only one member of this executive committee is a physician practicing at the bedside, and he, in the Subcommittee on Scope, in sixty-five tie-votes, had decided in favor of admitting the drug under discussion. In other words, sixty-five more drugs and preparations would have been deleted by the Subcommittee on Scope had its chairman not voted in their favor, and he still had one more vote coming to him in the Executive Committee decisions.

Useless Drugs Accepted for the Next Pharmacopœia.—It was "love's labor" absolutely "lost" to collect 117,000 prescriptions from all over this country in order to ascertain how many times a given drug or preparation was ordered. How many times a drug or preparation is ordered is no criterion as to its value. Beer is in enormous demand, but it has not yet been shown that it has any medicinal or food value. Is the nutrient value of a food determined by the frequency with which it is used? The turnip is a vegetable that is constantly bought and constantly eaten, but its food value is almost nil. The Pharmacopœia is supposed to be a book of standards for drugs, and each drug should have some valuable activity.

As previously stated, if a physician desires to order a second-rate drug, he can always obtain it by the standard (if there was one) described in the last Pharmacopœia in which it was named. If this were not a fact, and if it were not a recognized fact, deletions of drugs from previous pharmacopœias would not have taken place. Such deletions (omissions) have occurred and a large number of drugs which appeared in the last Pharmacopœia will not appear in the next, according to the approved deletion list of the Executive Committee.

If some drugs have been deleted on account of their lack of value, why may not all drugs which are without value be deleted? The argument of those members of the Revision Committee who desire a large Pharmacopœia is that a drug should be accepted and standardized, if some physicians desire that drug. The same argument would hold good for the very drugs that these men have deleted, and therefore this is an argument of no value for officializing drugs that are worthless.

It should constantly be borne in mind that the greater the number of drugs officialized, the greater the number of preparations that must be made, the greater amount of manufacturing that must be done by the pharmaceutical houses, and the greater the amount of buying that must be done by the retail druggist; in other words, the decision as to whether a useless drug shall enter the Pharmacopœia or not, is a commercial one. Will the medical men of the country stand for commercialism as determining whether or not a substance shall be officialized in the next Pharmacopœia, a supposed book of dependable values of useful drugs?

The following useless drugs and their preparations have been accepted at this date, April, 1913, for the Ninth Decennial Revision of the United States Pharmacopœia. It is, of course, supposable that many physicians will disagree with me in considering these drugs as of little value. Will anyone assert that any one of them is needed to cure a patient of an ailment, or to treat a condition, that may not be better treated by more active drugs?

Anthemis (Chamomile)
Arnica
Tinctura Arnicae
Berberis (Oregon Grape Root)
Fluidextractum Berberis
Calendula (Marigold)
Tinctura Calendulae
Calumba (Calumbo)
Fluidextractum Calumbae
Tinctura Calumbae

Cannabis Indica (Indian Hemp)
Extractum Cannabis Indicae
Fluidextractum Cannabis Indicae
Tinctura Cannabis Indicae
Chondrus (Irish Moss)
Cimicifuga (Black Snakeroot)
Extractum Cimicifugae
Fluidextractum Cimicifugae
Tinctura Cimicifugae
Condurango

Convallaria (Lily of the Valley)	Parcira
Fluidextractum Convallariae	Fluidextractum Parcirae
Crocus (Saffron)	Phytolacca (Poke)
Eriodictyon (Yerba Santa)	Fluidextractum Phytolaccae
Fluidextractum Eriodictyi	Pyrethrum (Pellitory)
Fluidextractum Eriodictyi Aromaticum	Tinctura Pyrethri
Frangula (Alder Buckthorn)	Quassia (Bitterwood)
Fluidextractum Frangulae	Tinctura Quassiae
Gambir (Pale Catechu)	Quillaja (Soapbark)
Tinctura Gambir Composita	Tinctura Quillajae
Gossypii Cortex (Cotton Root Bark)	Rhus Glabra (Sumach)
Fluidextractum Gossypii Corticis	Fluidextractum Rhois Glabrae
Grindelia	Sabal (Saw Palmetto)
Fluidextractum Grindeliae	Fluidextractum Sabal
Guaiacum (Guaiac)	Sanguinaria (Bloodroot)
Tinctura Guaiaci	Tinctura Sanguinariae
Tinctura Guaiaci Ammoniata	Sarsaparilla
Haematoxylon	Fluidextractum Sarsaparillae
Extractum Haematoxyli	Fluidextractum Sarsaparillae Compositum
Hydrastis (Goldenseal)	Senega (Senega Snakeroot)
Fluidextractum Hydrastis	Fluidextractum Senegae
Glyceritum Hydrastis	Syrupus Senegae
Tinctura Hydrastis	Serpentaria (Virginia Snakeroot)
Kino	Fluidextractum Serpentariae
Tinctura Kino	Tinctura Serpentariae
Krameria (Rhatany)	Staphisagria (Stavesacre)
Fluidextractum Krameriae	Fluidextractum Staphisagriae
Tinctura Krameriae	Stillingia (Queen's Root)
Lactucarium	Fluidextractum Stillingiae
Syrupus Lactucarii	Sumbul
Tinctura Lactucarii	Extractum Sumbul
Leptandra (Culver's Root)	Fluidextractum Sumbul
Extractum Leptandrae	Taraxacum (Dandelion)
Fluidextractum Leptandrae	Extractum Taraxaci
Lupulinum	Fluidextractum Taraxaci
Fluidextractum Lupulini	Triticum (Couch Grass)
Oleoresina Lupulini	Fluidextractum Triticis
Matricaria (German Chamomile)	Uva Ursi (Bearberry)
Mezereum	Fluidextractum Uvae Ursi
Fluidextractum Mezerei	Xanthoxylum (Prickly Ash)
Moschus (Musk)	Fluidextractum Xanthoxyli
Tinctura Moschi	Zea (Corn Silk)
Oleoresina Petroselini (Parsley) (Apiol)	Fluidextractum Zeae
Oleum Hedeomae (Oil of Pennyroyal)	

There is no good proof that hydrastis preparations have any special action on mucous membranes when used externally. There seems to be no good excuse for giving the disagreeable hydrastis preparations internally for action on the stomach.

Cannabis indica is a drug that varies greatly in strength, and its preparations rapidly deteriorate. Its action is therefore very uncertain, and therapeutically it is doubtful if *cannabis indica* is of any value, unless a too large dose of a strong preparation is given.

Drugs and Preparations that are Deleterious.—The following should not be officialized:

Veratrin and oleate of veratrin are dangerous.

Linimentum belladonnae is dangerous. The amount of absorption is uncertain.

Troches of potassium chlorate should not be officialized, as saliva mixed with potassium chlorate should not be swallowed. Potassium chlorate should never be given internally, in my opinion. It can cause severe irritation and even ulceration of the stomach, and kidney irritation and inflammation.

Dilute hydrocyanic acid should not be officialized, as it has no action whatever unless the dose is large, and then its action is dangerous.

Rapidly Deteriorate.—The following are a few of the preparations which rapidly deteriorate, and hence should not be officialized:

Acidum Hydriodicum Dilutum
Syrupus Acidi Hydriodici Dilutum
Acidum Hypophosphorosum
Acidum Nitrohydrochloricum Dilutum
Aqua Aurantii Florum
Aqua Aurantii Florum Fortior

Aqua Rosae
Aqua Rosae Fortior
Mucilago Acaciae
Mucilago Sassafras Medullae
Syrupus Aurantii
Syrupus Aurantii Florum

Inferior Preparations.—If the selection of a drug or preparation were left to the layman who must take the medicine, it is presumptive that he would select the most active, other things being equal, of the drugs or preparations of the class that he needed. The same must be true of the physician writing the prescription. Hence why should we standardize and officialize preparations of a second-rate drug? The following drugs have been accepted for the new Pharmacopœia, though they are pharmacologically and therapeutically inferior to other drugs which act similarly. I realize, of course, that many physicians will find many points of difference in opinion in regard to the individual drugs and preparations, but as a class each reader will certainly decide against these drugs and preparations, if he is familiar with the pharmacology of these and better drugs. While many of these drugs have activities, they are inferior to other drugs and preparations of the same class.

Acetum Scillae (Vinegar of Squill)
Ammonii Bromidum
Ammonii Iodidum
Ammonii Salicylas
Bismuthi et Ammonii Citras
Calcii Bromidum
Cambogia (Gamboge)
Camphora Monobromata
Carbo Animalis Purificatus
(Purified Animal Charcoal)
Ceratum Plumbi Subacetatis
(Goulard's Cerate)
Cerii Oxalas (Cerium Oxalate)
Infusum Pruni Virginianae
Liquor Acidi Arsenosi
Liquor Arseni et Hydrargyri Iodidi
Liquor Hydrargyri Nitratis
Liquor Ferri Subsulphatis
(Monsell's Solution)
Liquor Zinci Chloridi (Solution of Zinc Chlorid)
Magnesii Oxidum Ponderosum
(Heavy Magnesium Oxid)
Cinchoninae Sulphas

Euonymus (Wahoo)
Extractum Euonymi
Extractum Quassiae
Fluidextractum Cinchonae
Fluidextractum Digitalis
Fluidextractum Gentianae
Fluidextractum Rosae
Glyceritum Amyli (Glycerite of Starch)
Glycyrrhizum Ammoniatum
(Ammoniated Glycyrrhizin)
Guarana
Fluidextractum Guaranæ
Oleatum Quininae (Oleate of Quinin)
Oleum Picis Liquidæ (Oil of Tar)
Pilocarpinae Nitras
Quinina
Sodii Acetas
Sodii Chloras
Sodii Phosphas Exsiccatus
Styrax
Sulphonmethanum
Syrupus Rosae
Zinci Acetas

Unnecessary Officialization.—The following drugs have been accepted for the Pharmacopœia in two forms, or several of the same group have been accepted, though their activities are so similar that reduplication seems unnecessary. Although not listed here, the preparations of many of the drugs are too many. Where several preparations of a drug are offered, one or more of them is superfluous. The careless redundancy of the Executive Committee is shown by the fact that it has officialized in its last approved list, March, 1913, *scopolamin hy-*

drobromid and *hyoscin hydrobromid*, though they are commercially, pharmacally and therapeutically identical. Following are a few unnecessary redundancies:

Belladonnae Radix (Belladonna Root)	Colchici Semen (Colchicum Seed)
Belladonnae Folia (Belladonna Leaves)	Cinnamomum Saigonicum
Colchici Cormus (Colchicum Root)	Cinnamomum Zeylanicum
Hyoscyamus	These drugs are so similar to belladonna that there seems to be no reason for officializing them and their preparations.
Fluidextractum Hyoscyami	
Tinctura Hyoscyami	
Stramonium	
Tinctura Stramonii	
Unguentum Stramonii	
Hamamelidis Cortex (Witchhazel Bark)	Liquor Sodii Arsenitis (Solution of Sodium Arsenite)
Hamamelidis Folia (Witchhazel Leaves)	Viburnum Opuli (Cramp Bark)
Hyoscinæ Hydrobromidum	Viburnum Prunifolium (Black Haw Viburnum)
Scopolaminæ Hydrobromidum	
Liquor Potassii Arsenitis (Solution of Potassium Arsenite)	

THE DEADLY BICHLORIDE TABLET.*

FREDERIC E. NIECE, PHAR. D., NEW YORK CITY.

The rather large number of accidental poisonings by the careless taking of mercuric chloride tablets for those of some other less harmful drug is appalling, to state the least. Within the last few weeks, no less than nine to ten cases have been reported by the daily papers, in which serious consequences have resulted. The large percentage of deaths that have been recorded through the careless or ignorant handling of these tablets calls for stronger safeguards than the ordinary precautions now in force. The publicity given this form of poison, and its potent action, has created in the lay mind a new and easy source for obtaining new material for criminal purposes or self destruction.

The question therefore arises, what can be done to safeguard the innocent public against this new form of danger which seems to be increasing daily. These safeguards do not rest so much in legislative measures, which is the generally accepted plan for promoting the public safety, but more in well-devised public education as to the toxicity of such tablets, and such other efficient means as will forewarn the innocent in the event that danger is near.

Statistics show that the greater portion of deaths are accidental. For this reason safeguards should be thrown more about the tablet itself, and the package that contains it. That the "bichloride tablet" is deadly, can best be gleaned from the high percentage of fatalities incident to its absorption.

The records up to date show, that out of some 756 known cases, over 56 percent have proved fatal, while something less than 44 percent have recovered. These recoveries have resulted from immediate medical attention, and the small amount of the drug absorbed.

Much of this horror and sorrow has resulted from the heedless taking of these tablets by mistake for others of a dissimilar composition, which they closely re-

*Presented to Pennsylvania Pharmaceutical Association, June, 1913, in answer to Query No. 7. What new expedient can be devised to prevent poisoning through the mistaking of Corrosive Sublimate tablets for ordinary tablets used in medicine, numerous cases of such nature being reported from time to time?

semble in size, shape, color, and sometimes in taste. What seems to be the greatest evil in this connection is that these fatal mistakes usually take place in the evening, and at a time and under conditions in which the finger's touch is the only guiding element in locating what seems to be the desired headache tablet.

Therefore, innovations of any kind, no matter how ingenious they may be, providing they are not impracticable, should be received for serious consideration, if not for approbation. Even a slight increase in cost over the present expense should not deter the creation of new safeguards.

As possible methods of providing sufficient warning as to the dangerous character of bichloride tablets that will be suggestive both to the sense of sight and touch the writer submits the following propositions, together with specimens of tablets to illustrate the proposed new shapes.

First, a compressed tablet, shapened like that of a skull, with the contour of the shape greatly depressed at the points of indentation, colored with methylene blue, and stamped with the word "poison" in a different color, would be a step in the direction of greater safety.

Second, a tablet twice as long as its breadth, similar in form to that of a trapezoid, with serrated edges, colored with eosin, like samples submitted, marked "poison" in blue, and then wrapped in black tin foil, which has the skull and cross-bones pictured all over its surface, with the word, "poisonous" done in white.

Third, an irregular, grotesque shaped tablet, similar to that of a kidney, the midway or central depression markedly deep and wide, like samples submitted, colored with methyl green, with the word "poison" embossed upon its surface, and the tablet encased in a suitable flat gelatine capsule, just large enough to admit one tablet. This form would be an exceptional means of creating suspicion.

Samples of the last two suggestions are herewith submitted, the size of which is arbitrary, but should be large in order to insure greater safety.

By making the tablets a trifle larger than the ordinary size tablets, adults and especially children would find greater difficulty in swallowing them. By having them of irregular shape, with ragged edges, swallowing would not only be difficult, but they would be the more readily recognized in the dark by the finger's touch. Even in the daytime, its peculiar form would tend to create an association of ideas in connection with that of poison and death.

By wrapping them in appropriately colored and specially designed foil, or encasing them in suitably colored gelatin capsules, the mere act of removing the tablet from its wrapper would in a manner act as a stay of execution by psychological interference. In short, a feeling of suspicion would ensue, thereby acting as a warning before the fatal move is made.

As to colors, it is knowingly true, that the greens, blues, and reds are repugnant to most people, and are taken as indications of danger or poison. The color of the tablet itself would not only serve as a danger signal, but if dissolved in water, the solution also, owing to its color, would carry the same impression.

Before the machinery of the law begins to grind out ill-advised enactments, it would be well for the various pharmaceutical houses to enter into some form of understanding as to this vital question which is reaching alarming proportions.

By way of suggestion, the following would serve as a foundation to work upon:

1st. That no tablet be compressed, or massed into a gelatin capsule that contains more than 1-6 grain of corrosive sublimate (or some other agreed upon maximum amount) unless so made as to denote its potency.

2d. That no tablet be compressed that is colorless, round, ovoid, or oblong in shape, which contains dangerous amounts of corrosive sublimate.

3d. That separate and distinct packages be used for dispensing potent mercuric chloride tablets to the trades and the professions.

4th. That all mercuric tablets for external purposes, containing dangerous amounts of the drug, be colored with some form of soluble dye, one strongly suggestive of danger or poison, such colors as the greens, blues or reds.

5th. That all tablets of this type be oddly formed, marked with the word poison so as to make them easy of identification and differentiation, in the dark as well as the light, and be made large so as not to be easily swallowed.

6th. That these tablets be covered with some suitable covering like colored foil, or encased in gelatin capsules strikingly colored, and bearing the word poison all over its surface.

7th. That they be dispensed in bottles only, preferably odd in shape and of blue glass, with a label attached giving directions as to use and care in handling, printed in red.

8th. That aside from the directions as to use, the label also bear advice as to "first aid measures" that are considered effective, with the appellation—"Poison, For External Use Only—In case of Poisoning Send for a Physician At Once."

9th. That a separate label be affixed to each package on which is boldly printed the following—Not To Be Swallowed. Do Not Remove The Remainder Of These Tablets From This Package. Keep Bottle And Contents Away From All Medicines Used for Internal Purposes.

COFFIN-SHAPE FOR BICHLORIDE TABLETS.*

FRANKLIN M. APPLE, PHAR. D., PHILADELPHIA.

When carefully reading and studying this query one is impressed by the suggestive manner in which it has been worded, for the idea I have to offer for your consideration is largely the result of the query's phraseology.

You will observe that it suggests a *new expedient*, which is what you surely will find to be the basis of the suggestion I herewith offer.

The similarity in the weight, shape and general appearance of Corrosive Sublimate Tablets and Alkaline Antiseptic Tablets, and many headache tablets has

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been the cause for the sad accidents that have been reported from time to time, when the dangerous, poisonous corrosive sublimate tablets have been taken in mistake for tablets intended for internal administration.

It is unfortunate that we cannot educate the populace to the point of following the advice of Davy Crockett—"Be sure you're right, then go ahead," but we must take human nature as we find it exemplified in the majority of our fellowmen (and women) and endeavor to devise ways and means whereby they may be protected against their own negligence and carelessness—for who are in a better position to take such action than those of our profession, who are constantly in contact with these various drugs and their prepared forms for administration or application.

It is a known fact that the Tablets of Corrosive Sublimate are very easily procured, and are used to a very large extent in the home as an antiseptic, hence they are not looked upon as the dangerous agents that they really are in the hands of the careless and ignorant.

An attempt has been made by at least one manufacturing house to overcome the similarity of shape of the Corrosive Sublimate Tablets and all other tablets manufactured by them, and a container similar to the shape of the tablet has been used to designate their brand of these tablets; and the blue and the red colored sorts of these tablets are no stranger to the wide-awake druggist and to physicians.

This latter idea I heartily endorse, as the solutions of this powerful medicinal agent should always be colored—preferably red,—to suggest activity and danger.

When casting about for ideas wherewith to overcome the difficulty that confronts us I endeavored to bear in mind the fact that the best and most appropriate one must be as distinctive and suggestive as possible, so as to impress upon the populace as forcefully as possible the fact that danger surrounds the article in hand.

After a careful examination of various ideas that came to mind I decided that the one I now present for your inspection is the par-excellent one—one that cannot be mistaken for anything now upon the market, and one not likely to be imitated very closely for any purpose.

The shape of this tablet—coffin-like—certainly is distinctive and suggestive and one that can be made even more suggestive by preparing the dies so as to counter-sink the emblem of the *skull and crossbones* into the tablet upon one side and the word *poison* upon the reverse side of it.

These emblems and the word could be embossed upon the tablet if deemed more desirable and more effective.

Some such shape should be legislated into existence and the old-fashioned form should be made an illegal one for these tablets—in the interest of the public welfare.

I feel assured that the dangers that beset these valuable, when properly handled and used, tablets can be largely overcome by adopting the idea now before you for your discussion.

THE PHENOL COEFFICIENT METHOD OF TESTING
DISINFECTANTS.*

JOSEPH W. ENGLAND, PH. M., PHILADELPHIA.

Ten years ago, S. Rideal and J. T. A. Walker (*Journ. Roy. San. Inst., London*, 1903, 424), devised a method for the bacteriological standardization of disinfectants, known as the Rideal-Walker Method. It is extensively used in England and the British colonies. Later, a modification of it was proposed in the *London Lancet* (Vol. 177, Nos. 4498, 4999 and 4500), known as the Lancet Method, and this was believed to be a distinct advance over the Rideal-Walker method. Still later a third modification was evolved by J. F. Anderson and T. B. McClintic, of the Hygienic Laboratory of the Public Health Service (*Bulletin No. 82, April, 1912*), known as the Hygienic Laboratory Method. This method has some of the features of the Rideal-Walker method as well as the Lancet Method, but also, important modifications. It is now being used by the Federal and state authorities in connection with the purchase of disinfectants, and has been officially adopted by some state boards of health.

The original method and its modifications consist in an attempt to measure the phenol-coefficient, or relative killing-power of disinfectants upon certain bacteria, under standard conditions, compared with phenol. Briefly stated, a coefficient is "a number or known quantity prefixed in algebra as a multiplier to a variable or an unknown quantity." The phenol or carbolic coefficient of a disinfectant is determined "by dividing the figure indicating the degree of dilution of the disinfectant that kills an organism in a given time, by that expressing the degree of dilution of the phenol or carbolic acid that kills the same organism, in the same time, under exactly similar conditions."

In determining the Rideal-Walker coefficient, the technical procedure is substantially as follows:

"Phenol solutions of known strength are used; cultures are grown in a standard medium, transplants being made every 24 hours; the loops used for all inoculations are of a standard size (about 4 mm. in diameter). Usually four dilutions of suitable strengths of the disinfectant to be used are made. Phenol controls of a suitable strength are also prepared. Five cc. of each of these dilutions are placed in sterile test tubes, to which are added at intervals of one-half minute a 24-hour broth culture of *B. typhosus* in the proportion of 1 drop of culture to each cubic centimeter of disinfectant used.

"At the end of two and a half minutes a loopful of each of the mixtures is inoculated into a test tube containing 5 cc. of standard broth, an interval of half a minute being thus allowed between taking the samples from the different dilutions. This is repeated at 5, 7½, 10, 12½ and 15 minutes. The broth tubes, after being incubated at 37° C. for 48 hours, are examined for growth.

"The results of the examination are then noted, and if suitable, comparative strengths of the disinfectant and phenol have been selected, the phenol coefficient is determined as above stated."

* Presented to the Pennsylvania Pharmaceutical Association, June, 1913.

Although the toxic power of phenol is taken as the unit of comparison, it is influenced, to a certain extent, by conditions, or in other words, it is not a constant unit.

The conditions that influence results are: "Organisms to be acted upon; number of micro-organisms and amount of organic matter to be added; strength and number of dilutions; time during which the disinfectant is allowed to act, and temperature." (Tr. B. P. C. vide Journ. A. Ph. A., 1912, 637).

By this method of testing disinfectants, no arbitrary standard of phenol toxicity upon bacteria is assumed, but the killing-power of a disinfectant upon bacteria is compared with the killing-power of phenol upon the same bacteria, under the same conditions, so that if the bacteria are of a "weak strain" or a "strong strain," the results of the test are comparative, because they have been made under exactly analogous conditions.

If, however, a "weak strain" of bacteria be used as a standard for a series of tests, and a "strong strain" for another series, the results of the test as to the coefficients will be somewhat different. But such variations are equalized by dividing the figure representing the percentage strength of the weakest killing solution of the phenol, by the figure representing the percentage strength of the weakest killing solution of the disinfectant tested, both at $2\frac{1}{2}$ and at 15, or 30 minutes. The mean resulting figure is assumed to be the true coefficient.

The nature of the test-organism has a great deal to do with the results obtained. With different species of organisms the coefficients obtained may vary as much as 300 percent. Walker and Rideal and Anderson and McClintic use the typhoid bacillus, the London Lancet the colon bacillus, and the Department of Health of the State of Maryland (which has a law directing that the labels of disinfectants shall give their coefficient value) specifies the use of either the typhoid or colon bacillus; though it is but fair to state that Charles Caspari, Jr., State Food and Drug Commissioner of Maryland, advises the writer that "in view of the fact that investigations during the past year have shown the great desirability of conforming the test to one specific bacillus, I think that a change in our regulations should and will be made very shortly."

The method originally devised, did not specify the use of organic matter in making the test, but it has been modified so that the test may be made with or without organic matter. Various forms of organic matter have been tried; peptone and gelatin are recommended by Anderson and McClintic.

The test *without* organic matter yields higher results than *with* organic matter. Thus, the phenol coefficient of Phenol Liquid (U. S. P. 1890), *without* organic matter is 177, and *with* organic matter is 176; of Crude Carbolic Acid (Navy Department) is 2.75 and 2.63, of Cresol is 2.90 and 1.75, and of Compound Solution of Cresol is 3.00 and 1.87, respectively.

The phenol coefficient method of testing disinfectants apparently marks a distinct step forward in methods of testing disinfectants, but while it has important possibilities, it has its limitations.

Woodward and Kingsett state that: "While the phenol coefficient method may serve to determine the relative germicidal value of similarly prepared preparations of a coal tar nature, it is not applicable for ascertaining the real or relative

values of other disinfectants of a different chemical nature." (Woodward and Kingsett, Trans. B. P. C., vide Journ. A. Ph. A. 1912, 637.)

During the past year, a number of bills have been introduced into different State legislatures, not only for standardizing disinfectants by the Anderson and McClintic method, but also for standardizing by the same method, deodorants, antiseptics and germicides; and also providing that the labels of such must be marked with the phenol coefficient in every case, and failure to do so shall be considered a misdemeanor subject to fine for each offense. In every case, fortunately, the bills have been killed or vetoed, and the reasons are obvious. It was assumed that these four classes of products could all be standardized by the phenol coefficient method, and such is not the case.

A disinfectant is a substance that destroys the cause of infection, such as phenol and compounds of a similar type.

A deodorant is a substance that destroys the odors or effects of bacterial action. It is not necessarily a disinfectant. Thus, charcoal is a deodorant, but it does not destroy bacteria, and has no coefficient value. Sulphur is a deodorant, but it is not a disinfectant until burned and converted into sulphurous acid gas.

Formaldehyde is both a deodorant and a disinfectant, while corrosive sublimate is a powerful germicide but not a deodorant.

A germicide is a substance that kills germs. It is synonymous in meaning with disinfectant.

An antiseptic is a substance that inhibits or prevents the growth and development of bacteria, but it does not kill bacteria, and can have, therefore, no coefficient value. Saturated solutions of salt or sugar will preserve meat or vegetable substances from decomposition and decay, that is they are antiseptic in action, but they are not germicidal.

The class of antiseptics embraces a long list of substances which are of material importance in practical medicine and surgery. There are many conditions of the human body in which it is desirable to restrain or prevent bacterial action, and yet in which the use of germicides and disinfectants are contradicted by reason of their corrosive action. The list of antiseptics embraces such commonly used substances as Boric Acid, Iodoform, Bismuth Subiodide, Naphthalene, Salol, Menthol, Thymol, Guaiacol, Acetanilide, etc.

Many antiseptics are insoluble in water and cannot be tested against organisms until made soluble, and even then if such a test could be made, it would be valueless, because it would not represent the body-conditions under which such antiseptics act. Iodoform is a striking example. Iodoform is of recognized value in the treatment of wounds. It is insoluble in water. Helm and Rosving (Chem. News, 55), state that "sterilized iodoform jelly, when inoculated with micro-organisms, was found to be full of them, all growing freely on the third day." Bouillat (Zeitsch f praktisch Chem. 25, 300), finds that 10 percent of iodoform does not check putrefactive change in pancreas. But it is an unquestioned clinical fact that iodoform applied to a body-wound prevents putrefaction and promotes granulation and cicatrization, and this is probably because the wound-secretions decompose the iodoform into iodine products that cause sterility. And what is true of iodoform, as an antiseptic, in the treatment of wounds, is probably true of other insoluble antiseptics.

Boric acid is a most widely used antiseptic for the treatment of the eye conditions, and yet its solution (1 to 100) does not kill typhoid bacilli even after 15 minutes.

Hydrogen Peroxide is one of the most largely used antiseptics, and yet its germicidal powers are so weak, compared with phenol, that the determination of its coefficient is admittedly impracticable. (Bulletin No. 82, Hygienic Laboratory, 1912, 65).

The Hygienic Laboratory Method of standardizing disinfectants, with and without organic matter, has been adopted by the Council of Pharmacy and Chemistry of the American Medical Association, and it is very probable that the use of this method will become general in the United States, and displace other methods. It is not a perfect method and is not claimed to be, but its use within certain limitations (that is, applied only to disinfectants of the coal tar group), will do much to standardize a very variable group of commercial products.

THE EFFECT OF PARAFORMALDEHYDE, PHENOL AND CREOSOTE ON THE DIGESTIVE ACTION OF PEPSIN, PANCREATIN AND DIASTASE.*

L. H. GLICKMAN AND CHAS. E. VANDERKLEED.

Paraform, the crystallized, polymeric form of formaldehyde, has for a considerable number of years been to a slight extent employed in doses of from 5 to 15 grains as an intestinal antiseptic. Owing to the readiness with which formaldehyde is liberated from paraform, and the well-known disturbing action of this vigorous gas on digestive processes and its tendency to harden tissues and render protein substances insoluble, the use of paraform in these heroic doses has been limited.

Our interest was recently directed to a more careful study of effect of paraform on the digestive ferments by a suggestion from Dr. Walter J. Freeman of Philadelphia, who wished to employ this drug in small doses in the form of lozenges or pastilles. Some tablets were prepared, each containing Paraform $\frac{1}{4}$ grain, Sodium Bicarbonate $2\frac{1}{2}$ grains, Talcum 1 grain, Sugar q. s. 20 grains, Oil of Peppermint q. s. to flavor, and tests were then made to determine what interfering effect, if any, these would have on the artificial digestion of proteids and starch.

As we wished to have something with which to compare the paraform, we also ran tests in which the effects of phenol and of creosote were studied. In order to make the experiments comparable as nearly as possible to its use in the case of patients under normal food conditions, we considered the average amount of egg albumin taken at one time as a "food dose" to be that contained in two eggs, or about 30 grams. In the tests with starch, 22.5 to 24 grams of dried starch were taken as normal food dose. The amounts of paraform, phenol

* Presented to the Pennsylvania Pharmaceutical Association, June, 1913.

and creosote to be taken as one dose, were considered to be respectively, $\frac{1}{4}$ grain, 1 grain and 3 minims. All tests were based upon these ratios between food and medicament.

EFFECTS UPON PEPSIN.

Digestion tests were run in strict accord with the U. S. P. method for testing pepsin. A blank test run without pepsin or added substance other than egg albumin and acid solution gave the volume of egg albumin (40 cc.) upon which to base percentages. A second test with added pepsin showed the latter to be strictly 1-3000 and to leave, therefore, 1 cc. of undigested albumin. The following table shows these results, together with the results obtained when paraform, phenol and creosote were added in the proportions respectively of $\frac{1}{4}$ grain, 1 grain and 3 minims to 30 gm. of coagulated egg albumin.

	Contents.	Amount Egg Alb. left.	Decrease in Activity of Pepsin.
No. 1	10 gm. egg, 35 cc. Acid Sol.....	40 cc.	0
No. 2	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol.	1 cc.	0
No. 3	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 1-12 gr. Paraform.....	1 cc.	0
No. 4	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 1-3 gr. Phenol.....	2 cc.	5%
No. 5	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 1 min. Creosote.....	4 cc.	10%

The above tests show that a normal dose of Paraform ($\frac{1}{4}$ gr.) has no inhibiting effect upon the digestive action of Pepsin, that a normal dose of Phenol (1 gr.) has a slight inhibiting effect, and that a normal dose of Creosote (3 min.) has more inhibiting effect than phenol.

To find out how much three times the normal dose of Paraform, Phenol and Creosote would inhibit the activity of the Pepsin, the following experiments were conducted:

	Contents.	Amount Egg Alb. left.	Decrease in Activity of Pepsin.
No. 1	10 gm. egg, 35 cc. Acid Sol.....	43 cc.	0
No. 2	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol.	1 cc.	0
No. 3	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 1-4 gr. Paraform.....	24 cc.	55.8%*
No. 4	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 1 gr. Phenol.....	3 cc.	7%
No. 5	10 gm. egg, 35 cc. Acid Sol. 5 cc. Pepsin Sol. 3 min. Creosote.....	29 cc.	67%

* As the Paraform tablets contained sodium bicarbonate it was believed that the large amount of egg albumin left was due to the fact that the acid was partly neutralized by the bicarbonate. A new series of tests were made, and the tablet neutralized with 0.3 percent Hydrochloric Acid before adding it to the Pepsin, Acid Sol. and Egg Albumin mixture. After 2½ hours there remained 12 cc. egg albumin or 28 percent decrease in activity of Pepsin due to three times the normal dose of Paraform, exclusive of the inhibiting effect of the bicarbonate in the tablet.

EFFECT UPON PANCREATIN.

Digestion tests made with starch in accordance with the U. S. P. method showed that Paraform, Phenol and Creosote have no inhibiting effect upon the

converting power of the Pancreatin even if the dose is increased to three times the medicinal dose. 22.5 gm. of starch was taken as a normal dose in the tests with Pancreatin. The following table shows the effect of the "normal" doses of paraform, phenol and creosote:

	Contents.	Color.	Decrease in Activity of Pancreatin.
No. 1	7.5 gm. starch, 0.3 gm. Pancreatin.....	Wine	0
No. 2	7.5 gm. starch, 0.3 gm. Pancreatin, 1-12 gr. Paraform.....	Wine	0
No. 3	7.5 gm. starch, 0.3 gm. Pancreatin, 1-3 gr. Phenol.....	Wine	0
No. 4	7.5 gm. starch, 0.3 gm. Pancreatin, 1 min. Creosote.....	Wine	0

The next table shows that even 3 times these "normal" doses was without effect upon the conversion of starch.

	Contents.	Color.	Decrease in Activity of Pancreatin.
No. 1	7.5 gm. starch, 0.3 gm. Pancreatin.....	Wine	0
No. 2	7.5 gm. starch, 0.3 gm. Pancreatin, 1-4 gr. Paraform.....	Wine	0
No. 3	7.5 gm. starch, 0.3 gm. Pancreatin, 1 gr. Phenol.....	Wine	0
No. 4	7.5 gm. starch, 0.3 gm. Pancreatin, 3 min. Creosote.....	Wine	0

EFFECT UPON DIASTASE.

About 24 gm. of starch was taken as a normal dose, in tests with Diastase.

	Contents.	End of 1 hr.	End of 1¼ hrs.	End of 1½ hrs.	End of 2 hrs.	Decrease in Activity of Diastase.
No. 1	16 gm. starch, 0.064 gm. Diastase.	Blue	Pale Blue	Pale Purple	Wine	0
No. 2	16 gm. starch, 0.064 gm. Diastase, 2-4 gr. Paraform.....	Very Blue	Blue	Blue	Pale Blue	Approx. 10%
No. 3	16 gm. starch, 0.064 gm. Diastase, 2 grs. Phenol.....	Blue	Purple	Wine	Wine	0
No. 4	16 gm. starch, 0.064 gm. Diastase, 6 min. Creosote.....	Pale Blue	Pale Purple	Wine	Pale Wine	0

The above table shows that Phenol and Creosote, in three times their normal doses, have no inhibiting effect upon Diastase. In the case of Paraform there is a slight inhibiting effect amounting approximately to 10 percent of the activity of the Diastase.

SUMMARY.

Paraform. A normal dose of paraform ($\frac{1}{4}$ grain) had no inhibiting effect upon the action of either pepsin, pancreatin or diastase.

Three times the normal dose of paraform ($\frac{3}{4}$ grain) had an inhibiting effect upon the action of pepsin amounting to about 28 percent and on diastase amounting to about 10 percent.

Three times the normal dose of paraform ($\frac{3}{4}$ grain) had no inhibiting effect upon the action of pancreatin.

Phenol. A normal dose of phenol (1 grain) had an inhibiting effect on pepsin amounting to about 5 percent, while three times the normal dose seemed to increase the inhibiting effect only to about 7 percent.

Three times the normal dose of phenol (3 grains) had no inhibiting effect either upon pancreatin or diastase.

Creosote. A normal dose of creosote (3 minims) had an inhibiting effect upon pepsin amounting to about 10 percent, while three times the normal dose of creosote (9 minims) increased the inhibiting effect on pepsin to about 67 percent.

Three times the normal dose of creosote (9 minims) seemed to have no inhibiting effect either upon pancreatin or diastase.

It must be remembered, of course, that all of these experiments were carried out as laboratory experiments in glass and it does not necessarily follow that paraform administered either to healthy or sick patients, would be without disturbing influences on digestion.

ANALYTICAL LABORATORY OF H. K. MUIFORD COMPANY, June 19, 1913.

EXAMINATION OF TIN FOILS FOR ARSENIC, AND A MODIFIED GUTZEIT'S TEST.*

A. F. JUDD, PHAR. D., PITTSBURGH.

I submit the following in answer to query No. 5, being data on a few tin foils which were obtained from several sources, i. e., Chocolate Candy, Gum, Tobacco, etc.

The work was carried out by first effecting solution by means of aqua regia, dispelling excess of acid, acidulating with dilute hydrochloric acid, and warming until a clear solution was obtained, except in the case of the so-called lead foils.

The arsenic was then determined qualitatively by means of a Marsh Arsenic Tube, and checked by a proposed modified Gutzeit's Method, both methods being continued one hour.

Below are given the foils in two groups, first, those which are practically pure tin foils; second, those which show a heavy lead reaction, and herein designated as lead foils.

Tin Foils—

Fleishman's Yeast.....	Arsenic absent
Baker's Bitter Chocolate.....	Arsenic absent
Wittman's Candy "Sampler".....	Arsenic absent
Wittman's Candy "Sampler," gilded.....	Arsenic absent
Cream Cheese, Shefford Cheese Co.....	Arsenic absent
Mulford's Phenothalein Chocolates.....	Arsenic absent
Peter's Sweet Milk Chocolate.....	Arsenic trace
Peter's Sweet Milk Chocolate, 2 specimens.....	Arsenic absent
Hershey's Sweet Milk Chocolate.....	Arsenic trace
Bryn Mawr Chocolate, green foil.....	Arsenic absent
Bryn Mawr Chocolate, lavender foil.....	Arsenic absent
Wilbur's Chocolates.....	Arsenic absent
Fleishman's Yeast Spec., No. 2.....	Arsenic absent

Lead Foil—

Johnson's Bitter Chocolates.....	Arsenic absent
Beechnut Chewing Gum.....	Arsenic absent
Piper Heidseck Chewing Tobacco.....	Arsenic absent
Beeman's Chewing Gum.....	Arsenic absent
Fatima Cigarettes.....	Arsenic present
Five Brothers Tobacco.....	Arsenic absent

* Presented to the Pennsylvania Pharmaceutical Association, July, 1913.

It would seem from the above data that the tin foils are generally of a nearly free arsenic nature.

The foils from Peter's Chocolate show a variation, in that one shows traces of arsenic, whereas it is absent in the other specimen. The specimens were obtained from different sources, and undoubtedly were from different stocks of foil.

Owing to the simplicity of the following method for the qualitative determination of arsenic and its apparent delicacy, it would seem strange to me that it had not been tried before, but I have been unable to find it mentioned in any available literature on the subject of arsenic.

In carrying out the Marsh Test to guard against the possible escape of undecomposed arsenic, the gas was lead into a weak silver nitrate solution and each specimen which contained arsenic caused a precipitation in the solution, therefore it occurred to me to try out the following method. It is simple, easily and readily carried out and seems very delicate.

It is based upon Gutzzeit's well-known arsenic test. The apparatus consists of a generator, such as is used in the Marsh apparatus, and a 100 cc. Erlenmeyer flask containing 50 cc. of solution of silver nitrate, another containing 50 cc. of an alkaline solution of lead acetate.

The solutions are prepared as follows:

1. Lead Solution.

Lead acetate.....	0.5
Sol. NaOH 5 percent.....	1000. cc.

2. Solution of Silver Nitrate, centinormal.

The alkaline solution of lead acetate is intended to absorb any hydrogen sulphide which may be generating with the hydrogen; it is therefore placed between the generating flask and the one containing the silver solution, which will take up any arsene formed.

The following experiments may show the adaptability of this modified method.

Hydrogen produced from arsenic free zinc and sulphuric acid, run through the alkaline lead acetate, then through the silver nitrate, showed nothing in either flask, or at most only a slight darkening in the delivery tube of the last, or silver nitrate flask.

When 0.0072 arsenic, calculated as the element, was added, a very heavy and voluminous precipitation occurs in the silver nitrate flask.

With 0.00072 a heavy precipitate was still formed.

With 0.000072 there is still a very pronounced precipitation not only in the tube, but also throughout the solution of silver nitrate.

Lack of time prevented further work along this line, and also the investigation of the factors which might interfere, with one exception, the presence of hydrogen sulphide.

Ferrous sulphide was added to the apparatus generating the hydrogen, the solution containing the alkaline lead acetate was strongly darkened, while the silver nitrate was not affected.

Next ferrous sulphide and arsenic trioxide were added, with a darkening and precipitation in both flasks.

If this method is as reliable as it appears, it gives a qualitative method which is

both simple and easy, inasmuch as it does not require the same amount of attention that the Marsh test requires. It also lacks the danger of explosion and injury attendant on the Marsh test.

The extreme delicacy of this reaction might be considered an objection for the reduction of the silver nitrate with the gas delivered from nearly arsenic-free zinc and sulphuric acid; but this is never as pronounced as when the minutest amount of arsenic is present.

At most the reagents give a coloration at the end of the delivery tube, but never in the flask nor throughout the solution.

It seems best to run the reagents for ten or fifteen minutes before introducing the suspected substance, and noting the difference, if any, which may occur.

SUMMARY OF DRUG EXAMINATION RESULTS.*

J. ED. BREWER.

The following substances were examined during the past twelve months in the analytical department of Smith, Kline & French Co. Instances of adulterated and inferior drugs are given, as well as comparisons between drugs of medicinal and so-called garden variety:

Acacia. Three samples of acacia siftings were examined which yielded ash in excess of the U. S. P. limit of 4 percent.

Senna. Two samples of senna siftings yielded 16.22 percent and 25.25 percent of ash respectively.

The abnormal ash in this case, as well as in the acacia siftings, is quite probably due to the fact that when the drug is sifted the fine foreign material, such as sand, pebbles, etc., from the entire drug is left almost wholly in the siftings.

Some trouble was experienced in obtaining check results in determining the ash of senna siftings, due to the presence of pebbles of considerable size. This difficulty was overcome by reducing the entire sample to a No. 40 powder.

Aloin. Three samples of aloin were examined, none of which answered all of the U. S. P. requirements. Sample No. 1 contained 2.54 percent of water insoluble material, 21 percent of alcohol insoluble material, and left a residue of 1.2 percent upon ignition. Sample No. 2 contained 0.3 percent of water insoluble material, 22.9 percent of alcohol insoluble material, and left a residue of 0.56 percent upon ignition. Sample No. 3 was not soluble in 55 parts of acetone and left a residue of 0.4 percent upon ignition.

Considerable difficulty has been experienced in obtaining aloin of U. S. P. quality.

Cudbear. One sample of powdered cudbear was examined, which yielded 60.6 percent ash, 95.8 percent of which was sodium chloride.

Sarsaparilla Root. One sample of sarsaparilla root siftings yielded 44.40 percent of ash.

Spigelia. Two samples of spigelia were examined. One of the powdered

* Presented to the Pennsylvania Pharmaceutical Association, June, 1913.

drug yielded 32.65 percent of ash and 25.4 percent of hydrochloric acid insoluble ash.

The other, of the whole root, gave 41.78 percent of ash and 37.55 percent of hydrochloric acid insoluble ash. The high ash content of this drug is probably due to the earth which adheres to the roots when they are gathered.

Anise Seed. Five samples of anise seed were examined, which contained 1.22 percent, 2.13 percent, 3.93 percent, 4.09 percent and 5.87 percent, respectively, of foreign material such as stems, sticks, dirt and considerable coriander seed.

Cardamom. Four samples of powdered cardamom were examined, none of which answered the U. S. P. requirement of not more than 4% ash. Two of these samples were deficient in the volatile oil content as they did not contain quite 1% of volatile oil.

One sample was composed of the powdered whole fruit which partially accounted for its high ash and low volatile oil content.

Guaiac. One sample of guaiac contained 34.1% of alcohol insoluble material and yielded an ash of 4.8%.

Jalap. Five samples of jalap were all of U. S. P. quality. No trouble has been experienced in obtaining jalap which answers the U. S. P. requirements, but it has been a very difficult matter to obtain two samples from the same lot which will assay the same. This difficulty is apparently caused by a great variation in the resin content of individual tubers.

Belladonna Leaves. Of twelve samples of belladonna leaves examined only one contained less than the U. S. P. requirement of mydriatic alkaloids. One sample was found to contain several scopolia leaves and these samples were of very poor physical appearance due to a large proportion of thick stems present.

Nux Vomica. Three samples of nux vomica were examined. They contained 0.95%, 1.25% and 1.06% of strychnine respectively.

Hyoscyamus. Seven samples of hyoscyamus leaves contained from 0.034% to 0.066% of mydriatic alkaloids. It is almost impossible to obtain hyoscyamus leaves which will answer the U. S. P. requirement of not less than 0.08% of mydriatic alkaloids.

American Cannabis. The most active of the four samples examined had only about 4-5 of the physiological activity of a standard indian cannabis.

Santonica. Three samples of santonica were examined, two of which contained only the slightest trace of santonin and the other contained 1.93%. The National Standard Dispensatory states "Santonica should contain from 2.5% to 3.5% of santonin; yet the commercial article rarely yields more than 2%, often less."

As the above results would indicate, there is a considerable amount of santonica on the market which is absolutely worthless in so much as its anthelmintic action is concerned.

In the estimation of santonin in Santonica by Thaxter's Method as given in "Archiv. der Pharmacie," Vol. 238, page 383, precautions should be taken so that resins or a mixture of resins and santonin are not weighed as pure santonin.

Manaca. Two samples were examined, the one proved to be a mixture of about equal parts of Manaca and some foreign root and the other was composed entirely of the foreign root, the identity of which we have not ascertained.

The chief points of differentiation of these two roots has been discussed by

Mr. F. A. Miller in Vol. 2, No. 5, page 594 of "The Journal of the American Pharmaceutical Association."

Parsley Seed. One sample of medicinal parsley seed was compared with four samples of garden parsley seed and they were found to be identical in microscopical structure, germinating power and apiol content.

The medicinal parsley seed yielded 21.76% of acetone and 6.7% of alcohol soluble extract. The garden parsley seed yielded 21.04% of acetone and 5.2% of alcohol soluble extract.

Coca Leaves. As usual no trouble was experienced in obtaining coca leaves of U. S. P. quality as the one sample which was examined yielded 1.18% of ether-soluble alkaloids.

ANALYTICAL DEPARTMENT OF SMITH, KLINE AND FRENCH COMPANY.

REPORT OF P. P. A. COMMITTEE ON DRUG MARKET.*

Owing to the unusually heavy demand upon the time of your Chairman and his co-workers on the Committee on Drug Market during the past winter and spring, the report which we have to offer this year has been gathered from a somewhat more limited field than usual. We trust, however, that it will be found fairly to outline the quality of drug products, as offered in the Pennsylvania market during the past year.

Not many startling cases of willful adulteration have come to our notice, but the vagaries of climate and season have as usual played their part in influencing the quality of the vegetable drugs on the market,—tending to prove that our U. S. P. standards for the vegetable drugs, must of necessity be largely arbitrary and that it is a very difficult matter for the U. S. P. Revision Committee to fix minimum standards for drugs that are reasonably high, and at the same time are such that at some time or other during the ten years, more or less, through which they are official, are not too high because of seasonal conditions.

Nevertheless, your Committee most heartily approves of the stand which the Revision Committee has taken in opposition to the proposition to withdraw all standards for the drugs themselves, applying restrictions only to the preparations of the drugs. Such a course would result, we believe, in tending to make the United States the dumping ground for the poorer quality of all foreign drugs, just as it used to be the dumping ground,—but thanks to our efficient customs officials, no longer is, for poor quality asafetida. We believe in maintaining reasonably high standards, and if, as occasionally happens, a drug cannot be secured of U. S. P. strength, the difficulty can be overcome by having the Treasury Department temporarily suspend its rules or lower its standard until the poor season shall have passed,—as has already been satisfactorily done in the cases of Hyoscyamus and Asafetida.

The following specific comments on drugs and chemicals are based upon records taken from the analytic laboratory files of the Smith, Kline & French Co and the H. K. Mulford Co., from June 1, 1912, to June 1, 1913:

Acetic Acid, U. S. P. Of the seven samples examined five answered the U. S.

*Presented to Pennsylvania Pharmaceutical Association, June, 1913.

P. requirements in every respect. The other two were satisfactory with the exception that they contained an abnormal amount of empyreumatic substances.—Reported by J. G. Roberts.

Alcohol, U. S. P. Of 75 lots examined, all tested 95% or over, and it was not necessary to reject any for any cause.—Reported by J. C. McCaffrey.

Alcohol (distilled from cane). This lot was slightly under strength and had a molasses-like odor which rendered it unfit for many pharmaceutical purposes. It did not answer the U. S. P. tests for the absence of amyl alcohol, non-volatile impurities and carbonizable or organic impurities.—Reported by J. G. Roberts.

Aloes, U. S. P. Of 15 samples examined, 10 contained less and 5 more than the 10% of moisture allowed by the U. S. P., the highest testing 13.2% and the lowest 6.9%. None of the samples gave more than 2 gm. of insoluble residue on applying the U. S. P. boiling water test, but in no case could the resulting solutions be said to be "nearly clear" as the U. S. P. directs. Neither were "nearly clear" solutions in alcohol obtained in the test for "absence of gum, dextrin and inorganic impurities," thus showing the need for an improvement in the new pharmacopœia of the wording of these requirements. Such statements as "nearly clear" are not sufficiently definite for a book of standards.—Reported by Geo. E. E'we.

Aloin, U. S. P. All of the seven samples gave residues upon ignition, ranging from 0.31% to 1.09% (U. S. P. requires no residue). All of the samples were faintly acid to litmus except one which was neutral. The lowest alcohol solubility was 98.5%. All of the samples dissolved in water to a faintly cloudy solution. All this shows that the present U. S. P. requirements for a medicinally satisfactory aloin are probably a little unnecessarily severe.—Reported by George E. E'we.

Two samples were examined and were found to be insufficiently soluble in alcohol or acetone and yielded a residue upon ignition. One sample was also not sufficiently soluble in water and gave a yellow color when shaken with petroleum ether.—Reported by J. G. Roberts.

Almond Meal from Bitter Almonds. Good examples of the substitution that is still practiced in spite of Federal, State and private supervision of food and drug products are shown by the fact that four samples of what was claimed to be Almond Meal was found to be Apricot Kernel meal.

Because of the fact that the kernels had been blanched and deprived of their outer covering before grinding we were unable to state positively by microscopic means whether these samples were genuine or not. Therefore we extracted the oil and by an examination of it we were able to determine that the samples were not Bitter Almond Meal.

An average of three samples submitted by one dealer yielded 19.9% of oil. The sample from another dealer yielded 19.4%. Wiley, in his book, "Food and Drugs," states that Almond Meal should yield about 40% of oil.

The acid number of each sample was within the limits for almond oil and the saponification number conformed to the U. S. P. standards for almond oil. But no evidence of substitutions could be established from these figures as the acid number and the saponification number of almond oil and apricot kernel oil are almost identical. The most conclusive evidence that the extracted material was

not almond oil was obtained from the iodine number which was 107 in one case and 108 in the other. This is beyond the U. S. P. limits of 95-100 for almond oil and is very close to the maximum of 108 for apricot and 109 for peach kernel oils.

In view of the fact that none of these samples responded to Bieber's test for almond oil and also because of the high iodine number and low oil content we concluded that these samples were not as represented and were probably ground from apricot kernels.—Reported by J. G. Roberts.

Alum Exsiccated, U. S. P. The moisture in 13 samples averaged 5.00% and ranged from 2.6% to 9.5%. The maximum allowed by the U. S. P. is 1%. The fact that dried alum is exceedingly hygroscopic accounts for the slight excess of moisture, but shows the necessity for being on the lookout to avoid paying for water when dry or nearly dry product is wanted. Stocks are not the only commodities that are occasionally "watered." Reported by J. C. McCaffrey.

Ammonium Iodide, U. S. P. No trouble due to decomposition was experienced with the lots examined during the past year. All of the samples examined were normal in color and remained permanent.—Reported by J. G. Roberts.

Ammonia Water, 10% U. S. P. Of 27 samples examined, 3 were below 10%, the lowest being 9.6%, 23 were above 10%, running up to 11.0%, and one was exceptionally high, running 13.4%.—Reported by Geo. E. E'we.

Ammonia Water, 26% U. S. P. Of 10 samples examined, 6 were above and 4 below standard, ranging from 25.9%-29.5%.—Reported by Geo. E. E'we.

Aniline Colors. All of the samples examined were free from arsenic by the Modified Gutzeit test, using 0.5 gm. samples; contained traces of iron but no other heavy metals by U. S. P. time limit test, using 0.5 gm. samples. One sample contained a large quantity of granular sodium chloride which may have been an adulterant, but more likely was employed by the manufacturer to render his product uniform in coloring power.

The Food and Drugs Act Regulations limit the use of aniline colors in food products to a certain list of approved colors given in Food Inspection Decision No. 76, but place no restrictions upon aniline colors used in medicines other than that they must not contain arsenic, zinc, or other harmful or poisonous constituents.—Reported by C. E. Vanderkleed.

Annatto. One sample was examined which yielded 21% of ash. This ash was principally sodium chloride which, according to some authorities, is added to intensify the color. It seems to be the general custom to do this as the samples reported by various operators all yield a high amount of ash which is practically all soluble in water.—Reported by J. G. Roberts.

Anthraquinone Green. In order to determine if this preparation contained abnormal amounts of arsenic it was subjected to Zehner's test which indicated a trace. This result was then confirmed with the Magnesium Ammonium Arsenate precipitation method given in Circular No. 102, published by the U. S. Department of Agriculture. Five parts per million of arsenic (As) was found with this method.—Reported by J. G. Roberts.

Apiol (Fluid Green). The specific gravity at 25° of three samples examined ranged from 0.986 to 1.004. All of the samples gave a turbid solution with olive oil and were miscible in all proportions with Chloroform, Alcohol and

Ether. But upon standing over night a flocculent precipitate was observed in each case.—Reported by J. G. Roberts.

Arsenic Trioxide, U. S. P. Of 8 samples examined, 2 were slightly below the required 99.8%, assaying 99.2 and 99.4% respectively.—Reported by Fritz Heidlberg.

Asafoetida, U. S. P. There does not seem to be any difficulty whatever in obtaining Gum Asafoetida that conforms to the U. S. P. requirements. The alcohol soluble portion is usually above 65% and ranged from 64.5% to 82.33%. The ash content is also well below the maximum amount permitted by the U. S. P. The highest amount of ash that we obtained on 13 samples was 11.99% and the lowest 2.91%.

The powdered asafoetida has also improved in quality. Owing to improved methods in drying it is now possible to get powdered asafoetida containing 60% to 65% of alcohol soluble matter instead of 40—50% as formerly. This powder may be a little darker in color than formerly supplied, but it is of better quality.

In spite of the general improvement in quality of Gum Asafoetida there is no doubt that good quality asafoetida has been refused admittance to the country on account of the enforcement by the Federal Government of the lead number standard. There has been considerable discussion of this subject and the consensus of opinion, both in this country and abroad, is that the government standard of not less than 200 is too drastic. A paper by Harrison and Self read before the London branch of the Pharmaceutical Society of Great Britain contains the results obtained on 37 samples of Asafoetida which the authors stated they had every reason to believe were genuine. Only four of these samples gave lead numbers above 200. Twenty-nine gave lead numbers ranging from 102—175. The remaining four gave the following numbers: 95, 59, 57 and 18. Two samples examined in the Analytical Department of Smith, Kline & French Co. gave lead numbers of 142 and 216. The source of these samples is not known, as they were obtained through a brokerage house.—Reported by J. G. Roberts.

Results on Asafoetida obtained in the H. K. Mulford Company laboratories were not so satisfactory as those reported by Mr. Roberts, but we attribute a part of the trouble to difficulty in sampling. We have recently installed a new grinding machine for gum samples made by Werner & Pfleiderer Co., Saginaw, Mich. This little machine is built on the lines of the dough-mixer and will grind a two-pound sample, organic and mineral matter alike, to a thoroughly uniform pulp in a few minutes.

Of 17 samples examined, only 8 exceeded U. S. P. requirements in alcohol-soluble matter, varying from 50 to 75.7%—while the other 9 ranged from 22.9 to 45.8%. In ash, only 7 ran under the U. S. P. limit of 15%, the other 10 running from 18.7 to 68%.—Reported by Vanderkleed & E'we.

Balsam of Fir. See paper by J. G. Roberts.

Balsam of Peru, U. S. P. Owing to the disposition in some quarters to substitute an artificial for a genuine balsam, it has become necessary to exercise the greatest precaution in purchasing and examining this product. It is claimed that the fictitious product conforms to all the U. S. P. requirements,—hence it cannot be taken for granted that because a balsam answers the U. S. P. requirements, it is a genuine article.

Two samples were examined and both gave negative results when subjected to various tests for the presence of synthetic balsams. But neither of them answer all the U. S. P. requirements. In fact we have been informed that the genuine balsam does not as a rule conform to the requirements of the U. S. P. This statement seems to be true as evidenced by the results obtained on these two lots. Both samples contained an excess of acid resins according to the U. S. P. test and one lot had a specific gravity of 1.155 at 25° C. The U. S. P. limits are from 1.140 to 1.150.

We have been informed from reliable sources that the specific gravity of a genuine Balsam of Peru usually ranges from 1.13 to 1.16; that the cinnamein content is between 50% and 60% and that it should require 2 to 3 cc. of half normal alcoholic potassium hydroxide solution for neutralization instead of not more than 2 cc. as specified by the U. S. P.—Reported by J. G. Roberts.

Balsam of Tolu, U. S. P. One lot was considered unsatisfactory because it gave indications of the presence of unknown foreign resins or exhausted balsam when subjected to a test given in the British Pharmacopœia. Sample had a dark reddish brown color.—Reported by J. G. Roberts.

Belladonna Stems. A sample assayed 0.253% mydriatic alkaloids. This sample is of academic interest only, as it could not legitimately be used for the manufacture of belladonna preparations.—Reported by W. H. Orrick.

Benzoin, U. S. P. The 39 samples examined averaged 73.5% alcohol soluble matter, ranging from 49.5% to 94.0%. The U. S. P. makes the rather indefinite requirement that Benzoin shall be "almost wholly soluble" in 5 parts of warm alcohol. (The proposed test for the new Pharmacopœia requires a 75% solubility for the Sumatra and a 90% solubility for the Siam variety, without limiting the amount of alcohol used.) The ash of all the samples was within the U. S. P. limit of 2%, except in 3 lots which ran 2.02%—2.06% and 4.68% respectively.—Reported by Geo. E. E'we.

Bone Ash. One sample sold as bone ash was really calcium phosphate, was pure white and assayed 98.8% $\text{Ca}_3(\text{PO}_4)_2$.—Reported by T. Liberati.

Blue—Soluble Laundry. About 0.5% of water insoluble material was obtained from each of three lots.—Reported by J. G. Roberts.

Brandy, U. S. P. One lot examined which contained an abnormal amount of oak tannin.—Reported by J. G. Roberts.

Boric Acid and Buchu Comp. Tablets. That medicinal tablets do not always contain what the label calls for is well illustrated by the following example. We had occasion to examine a sample of tablets labelled to contain in each tablet 2 grains each of Boric Acid and Sodium Bicarbonate, 1 grain each of Extracts of Buchu and Dog Grass, $\frac{1}{2}$ grain each of Extracts of Corn Silk and Hydrangea, and 1/500 grain of Atropine Sulphate. Each tablet weighed on the average only 5.95 grains, whereas the medicinal ingredients claimed, amounted to slightly over 7 grains, exclusive of excipient. This is clearly a case of fraud. We are glad to state, however, that the tablets were not manufactured in Pennsylvania.—Reported by Geo. E. E'we.

Caramel. The 5 samples were free from carbonate, which is an abomination in preparations which are faintly acid.—Reported by Geo. E. E'we.

Catechu (Gambir), U. S. P. Two of the 6 samples examined were below

70% soluble in alcohol, assaying 39.7% and 48.6% respectively; the other four ranging between 84.6% and 88.9%. The ash of the 6 samples was within the U. S. P. limit of 5%, except in one lot which reached 6.5%.—Reported by Geo. E. E'we.

Charcoal-Animal, U. S. P. Two lots were examined; one answered the U. S. P. requirements for carbonization and ash, while the other was not completely carbonized and yielded over 4% of ash.—Reported by J. G. Roberts.

Chinese Cantharides. Two samples assayed 0.91 and 1.03% respectively of cantharidin, thus running considerably higher than the variety sold as Russian which has averaged in our laboratory during the past year 0.6% (21 samples). Powdered Chinese Cantharides differ in appearance from the Russian only in color, being brown instead of green. Aside from this, there would seem to be no reason why the Chinese variety should not be employed as its vesicating power as tried out in veterinary practice is good. The new Pharmacopœia will provide an assay process for Cantharides with a minimum standard not yet decided upon.—Reported by E'we and Vanderkleed.

Chloroform, U. S. P. Only 1 of the 12 lots was strictly U. S. P., 11 contained negligible traces of impurities decomposable by H_2SO_4 , a few contained negligible traces of chlorides and chlorinated products, and one left a disagreeable odor on evaporation.—Reported by Richard Stockinger.

Two of three lots examined contained slightly abnormal amounts of decomposable impurities, otherwise they were all of U. S. P. quality.—Reported by J. G. Roberts.

Codcine Sulphate, U. S. P. Two of the samples examined were slightly effloresced, causing assays of 101.1 and 102.6% of the crystallized salt.—Reported by Geo. E. E'we.

Copaiba, U. S. P. The 10 samples examined were all within the U. S. P. limits as regards specific gravity, ranging from 0.966 to 0.987 at 25° C. (U. S. P.=0.950—.995 at 25° C.). They were all above the U. S. P. limit of 50% resin, ranging from 54.0% to 65.9%. In the U. S. P. test for "presence of a normal proportion of acid resin," the 10 samples required from 2.62—3.20 cc. N/2 alcoholic KOH, all within the U. S. P. limits of 2.3—3.2 cc.—Reported by Geo. E. E'we.

Cresote, U. S. P. The 10 samples examined were U. S. P. except that 2 contained small quantities of "coerulignol and some other high-boiling constituents of wood tar." The specific gravity of the samples ranged between 1.078-1.081 at 25° C.; between 80.1% and 94.4% distilled between 200—220° C.; and the samples answered all other U. S. P. requirements.—Reported by Geo. E. E'we.

Cresol, U. S. P. Until recently it has been almost impossible to obtain Cresol which conformed to the specifications given in the U. S. P. It appears that the U. S. P. standard of 1.036 to 1.038 is too high, as one-half of the samples examined had a specific gravity below 1.036. Of the fifteen samples examined but seven had a gravity between the limits previously quoted. The gravity of the other samples ranged from 1.0277 to 1.0345. One had a gravity of 1.0426 but it was of exceptionally poor quality and is not to be considered.

It has also been difficult to obtain Cresol with the proper boiling point. The U. S. P. states that 90% should distil between 195° and 205° C. Seven samples

had distilling points agreeing with the U. S. P. requirements, seven others yielded 86 to 88% and the remaining one 87%.—Reported by J. G. Roberts.

Of 11 samples examined only 2 exactly met all U. S. P. requirements. Three samples only had specific gravities within the U. S. P. range of 1.036 to 1.038, 3 being lighter and 5 heavier, and only 4 distilled to the extent of 90% between 195° and 205° C., most of them distilling over in part below 195°. While the solubility requirement is of practical importance, it would seem that some definite requirement as to bactericidal power would be more important than gravity and distillation tests, inasmuch as coal-tar distillers seem to care little about collecting a distillate that exactly meets U. S. P. requirements.—Reported by Vanderkleed & E'we.

Diastase. The 2 samples examined assayed 1:300 and 1:250 respectively in starch-converting power, both being satisfactory from the standpoint of a 1:250 standard. Reported by Geo. E. E'we.

Elm Bark, U. S. P. Several samples of this material were considered unsatisfactory because they had considerable of the brownish outer bark still adhering to them. One trial sample was very inferior as it contained considerable dead wood and was partly mouldy. Reported by J. G. Roberts.

Ether, U. S. P. One sample was examined which did not conform to the requirements of the U. S. P. It had an excess of acidity, a slight foreign odor and contained an aldehyde. The U. S. P. states that a piece of moistened blue litmus paper should not acquire a red color in 10 minutes. This sample acquired a distinct red color in less than half a minute. The amount of aldehyde present was only slightly in excess of the U. S. P. limit, but a distinct test was obtained in one hour and a more decided test in 1½ hours.—Reported by J. G. Roberts.

Ethyl Chloride, U. S. P. The 21 samples examined had specific gravities ranging from 0.912 to 0.915 at 8° C. (U. S. P.=0.911—0.916), and answered all other U. S. P. requirements.—Reported by Fritz Heidlberg.

Eucalyptol, U. S. P. One sample had a specific gravity of 0.9241 at 25° C., while the U. S. P. requires not higher than 0.923 at 25° C. This sample answered all other U. S. P. requirements and was considered O. K.—Reported by Geo. E. E'we.

Ferric Chloride Solution, U. S. P. Eight of the 19 lots examined were slightly below the 10% metallic iron required by the U. S. P., ranging from 9.58% to 9.94%, the other 11 lots assayed between 10.09% and 10.64%.—Reported by Geo. E. E'we.

Ferrous Sulphate Exsiccated, U. S. P. Varies greatly in 2FeSO_4 plus $3\text{H}_2\text{O}$ (which U. S. P. method of manufacture approximates). The three lots examined assayed 84.73%, 97.5% and 92.3% respectively.—Reported by Geo. E. E'we.

Formaldehyde Solution, U. S. P. Two of the 16 samples examined assayed slightly below the U. S. P. standard of 37%, testing 36.5% and 36.8%; the other 14 assayed from 37.1% to 38.7%.—Reported by Geo. E. E'we.

Gamboge, U. S. P. The 2 samples examined were strictly U. S. P.; ash 1.23 and 0.94%; alcohol insoluble matter 21.3% and 22.0%; and practically free from starch.—Reported by Geo. E. E'we.

Glycerin, U. S. P. The 10 samples examined were all above the U. S. P. specific gravity standard of 1.240 at 25° C., ranging from 1.24% to 1.251%. Most of

the samples contained negligible traces of butyric acid.—Reported by Geo. E. E'we.

As usual it has been a difficult matter to obtain a glycerin that conformed to the U. S. P. Butyric Acid test. The amount present is usually very small but it is sufficiently large to be easily detected by the U. S. P. test.—Reported by J. G. Roberts.

Guaiac, U. S. P. Four of the 15 samples examined contained less than 85% of alcohol soluble matter, assaying 63.2%, 83.5%, 70.1% and 80.4% respectively. Seven of the samples were purchased from one firm which evidently make a feature of straining their guaiac, as the seven samples all assayed above 97.3% alcohol soluble matter; the ash of these samples also ran exceptionally low, namely, from 0.07 to 1.1%.

Of the other samples, 5 contained more than 4% ash, assaying 6.8%, 8.2%, 4.9%; 4.3% and 8.4% respectively, and 3 were within the U. S. P. requirement of 4% ash, assaying 1.9%, 1.1%, 1.11% respectively.

It is practically impossible to obtain the acid number by the U. S. P. method.—Reported by Geo. E. E'we.

Honey, U. S. P. All of the samples examined were satisfactory from a chemical point of view, but several had an objectionable odor which was no doubt due to the lack of care in packing or during the time of production.

In seeking an explanation for this condition we learned that if honey is allowed to stand too long in the hive after finishing it becomes travel stained and discolored. In this manner it becomes contaminated with putrefactive substances which after a time decompose and give the honey an objectionable odor. Sometimes what is termed "brood honey" is mixed with a good quality honey. This is the portion that has been left in the hive over winter and serves as food for the bees. During this time it becomes contaminated with putrefactive substances which give the honey a rank odor and taste.—Reported by J. G. Roberts.

Hydrocyanic Acid, Diluted, U. S. P. Three of the 13 lots examined ran slightly below standard, 1.91%, 1.90%, and 1.92% respectively. The other 10 lots ranged from 2.02% to 2.40%, a rather large variation for so potent a drug.—Reported by Geo. E. E'we.

Hydrastis, U. S. P. Two lots were examined which contained only 2.45% of hydrastine. This is the first time in several years that we have had samples that contained less than the standard of 2.5% hydrastine given in the U. S. P.—Reported by J. G. Roberts.

Hydrogen Peroxide, U. S. P. Five of the 33 lots examined assayed slightly below 3% H_2O_2 , the lowest assaying 2.90%; the others ranged from 3.01% to 3.30%. Two of the 33 lots required more than 2.5 cc. N/10 KOH for neutralization, 3.95 cc. and 2.60 cc. respectively.

The total solids never ran above the U. S. P. limit of 0.03 gm. per 20 cc., ranging between 0.0114 to 0.0218 gm.

Only one of many lots tested for As responded to the test, and that only contained a faint trace.

Only one of many lots tested for HFl contained this very objectionable impurity; the one lot contained considerable and was of the cheap ten cent store

variety. All of the many lots examined for heavy metals and barium were free from these.

One sample contained a small sediment of BaSO_4 .—Reported by Carl E. Meddo.

Hypophosphorous Acids. The one sample of 30% standard examined, assayed 30.6%; 6 samples of 10% ranged between 10.7% and 11.4%; one of the four 50% samples was below standard, 47.0%; the others ranged from 50.7% to 54.7%.—Reported by Geo. E. E'we.

Iodine, U. S. P. The 13 lots examined all assayed above the U. S. P. standard of 99%; ranging from 99.1 to 99.9% absolute iodine.—Reported by Richard Stockinger.

Irish Moss, U. S. P. An examination of one lot showed that it contained 34.4% of moisture.—Reported by J. G. Rogers.

Iron Reduced, U. S. P. Of 15 samples examined, 10 assayed below 90% metallic iron and the rest above, ranging from 86.4% to 92.2%. One sample was labeled in the following interesting manner: "The quality of this product is as fine as can be practically turned out. It is not a strictly U. S. P. article because of the over-severe sulphide test." This sample produced a strong odor of H_2S immediately in the U. S. P. test for sulphide, yet many samples examined gave no blackening to lead test paper after 15 minutes in the test.—Reported by Otto Stockinger.

One lot was rejected for the reason that it did not have the proper appearance and contained an excess of sulphides.—Reported by J. G. Roberts.

Kaolin, U. S. P. None of the samples examined contained more than negligible traces of carbonates, which are a source of trouble in the manufacture of cataplasms kaolin.—Reported by Geo. E. E'we.

Kino, U. S. P. A sample assayed only 66.0% soluble in alcohol instead of being "soluble" as U. S. P. requires.—Reported by Geo. E. E'we.

Licorice Extract, Powdered. Two samples with a declaration of 30% starch assayed 39.5% and 32.3% starch respectively.—Reported by Otto Stockinger.

Lime Juice. Four samples assayed 0.0242%, 0.0269%, 0.0164% and 0.0189% respectively, of SO_2 . The usual declared content of SO_2 is 0.03%.—Reported by Geo. E. E'we.

Lycopodium Substitute. Two samples of this substance were recently offered as substitutes for Lycopodium. A brief examination showed that they were merely treated starch grains colored with methyl orange.

One sample contained corn starch and the other sample potato starch. They yielded 0.77% and 2% respectively of oil. Genuine Lycopodium usually yields about 50% of oil.—Reported by J. G. Roberts.

Magnesium Sulphate, U. S. P. An excess of chlorine was found in two lots which when computed to magnesium chloride amounted to 0.42% and 1.10%, respectively.—Reported by J. G. Roberts.

Milk of Magnesia. A sample assayed 20% over the strength declared on the label. This milk was recommended for the preparation of effervescent magnesium citrate solution and when so used resulted in an unpalatable preparation due to a lack of acidity.—Reported by Geo. E. E'we.

Magnesium Citrate, Effervescent. A sample so labeled contained magnesium

sulphate but no magnesium citrate, clearly a fraudulent preparation.—Reported by Geo. E. E'we.

Mercuric Oxide, Yellow, U. S. P. Three samples assayed less than the U. S. P. limit of 0.1% non-volatile matter, but two of the labels claimed only 0.005%, whereas they actually contained 0.038%. We do not understand why ridiculously exaggerated claims for purity are often made for chemical reagents of really satisfactory quality, when a conservatively accurate statement would prove more convincing.—Reported by Vanderkleed and E'we.

Myrrh, Gum. The 12 samples examined assayed on an average 36.0% alcohol soluble matter, ranging between 27.7% and 47.6%.—Reported by Geo. E. E'we.

Myrrh, Powd. The 2 samples examined varied widely in alcohol soluble matter, assaying 85.3% and 38.% respectively.—Reported by Geo. E. E'we.

Nitric Acid, U. S. P. Of the 9 lots assayed, 6 were below the U. S. P. standard of 68% HNO_3 , ranging between 63.7% and 67.3%; the other 3 lots assayed 69.7%, 69.8% and 69.4% respectively.—Reported by Richard Stockinger.

Oil of Almonds, U. S. P. This oil, which was submitted as a trial sample, was abnormal in several respects. The specific gravity was a little high and the iodine number was beyond the limit specified in the U. S. P. It had an iodine number of 106, whereas the U. S. P. limits are from 95 to 100.

The mixed fatty acids melted at about 4° C. This is considerably lower than the 13° to 14° C. given by Allen in Organic Analysis, Vol. 4. The fatty acids from Peach Kernel Oil melt at 3° to 5° C.

On account of the foregoing abnormal conditions and in view of the fact that the U. S. P. Nitric Acid test indicated the presence of either peach or apricot oil, this oil was not considered genuine and was therefore rejected.—Reported by J. G. Roberts.

Oil of Aniseed, U. S. P. All of the samples were of the U. S. P. quality with the exception that one sample was optically inactive. A trace of lead was detected in three samples.—Reported by J. G. Roberts.

Oil, Castor, U. S. P. All of the samples (8) examined answered all U. S. P. requirements except the benzin solubility test, to which no sample conformed.—Reported by T. Liberati.

Oil Cloves, U. S. P. The 9 lots examined were all above the U. S. P. standard of 80% eugenol, ranging between 80.0% and 82.0%; the specific gravities were between the U. S. P. limits of 1.040-1.060 at 25° C., ranging from 1.040 to 1.056 at 25° C.; and answered all other U. S. P. requirements.—Reported by Carl E. Meddo.

Oil, Cod Liver, U. S. P. Of the 18 lots examined, 6 were slightly above the upper U. S. P. limit of 0.922 in specific gravity, ranging from 0.9221 to 0.9230; 9 were above upper limit of 150 in iodine number, ranging from 151.3 to 154.0, and 1 was below the lower iodine number limit of 140, namely, 137.3; 3 were slightly above the upper saponification number limit of 185, namely, 187, 187, and 185.4. Ten of the 18 lots examined gave orange end colors in U. S. P. test for "absence of seal oil, etc." All of the 18 lots answered all other U. S. P. requirements.

One lot had following characteristics: specific gravity 0.9200 at 25° C., iodine number 134, saponification number 186.6, orange coloration in test for seal oil,

etc.; odor very poor, answered all other U. S. P. requirements. This sample was rejected.—Reported by Geo. E. E'we.

Oil Cubebs, U. S. P. One sample marked "distilled by steam from marc of a cubebs preparation" answered all U. S. P. requirements for oil cubebs. The odor was not as pungent.—Reported by Geo. E. E'we.

Oil of Eucalyptus, U. S. P. This oil had a satisfactory appearance but it had rather an objectionable odor. Its specific gravity was slightly above the maximum limit of the U. S. P. It also was unsufficiently soluble in 70% alcohol as it required $5\frac{1}{2}$ volumes to make a clear solution, whereas the U. S. P. specifies that only three volumes should be required.

In addition to the sample just discussed there was another one which answered the U. S. P. requirements with the exception that it had an optical rotation of $-1^{\circ} 49'$ instead of the dextro-rotation of not more than plus 10° , as specified in the U. S. P.—Reported by J. G. Roberts.

Oil of Linseed, U. S. P. An examination of one sample of Linseed Oil used for core making and sold as pure oil revealed a condition of gross adulteration. No extended examination was made but mineral oil, rosin oil, and fish oil were found.—Reported by J. G. Roberts.

Oil, Olive, U. S. P. The 6 samples examined had specific gravities ranging between 0.9100 and 0.9116 (U. S. P. requires 0.910-0.915); iodine numbers ranging between 81.2 and 84.2 (U. S. P. requires 80-88); 3 of the 6 had saponification numbers slightly below U. S. P. lower limit of 191, namely, 190.4, 190.4, and 190.6, the other 3 were 192, 194 and 194.5; none responded to the U. S. P. nitric acid test; and all 6 answered all other U. S. P. requirements.—Reported by T. Liberati.

Oil Orange. The optical rotation of the 8 lots examined ranged between plus 95.0° and plus 97.1° (U. S. P. equals not less than plus 95.0°). One lot marked "distilled by steam from marc of an orange peel preparation" answered all U. S. P. requirements, except of course method of manufacture, and the odor was inferior to that of an expressed oil.—Reported by Geo. E. E'we.

Oil Peppermint, U. S. P. The optical rotations of the 18 samples examined were all within 5.1° of each other, ranging from -20.7° to -26.8° , while the U. S. P. allows a range of 13° , namely, from -20° to -33° . A few of the samples contained traces of dimethyl sulphide.—Reported by Geo. E. E'we.

Oil Sandalwood, U. S. P. The optical rotations of all the samples examined during the past year ranged between the -16.0° and -20° required by the U. S. P.; the specific gravities from 0.969 to 0.971 (U. S. P. 0.965-0.980); Santalol from 92.3% to 95.2% and answered all other U. S. P. requirements.—Reported by Fritz Heidlberg.

One lot was examined which was not completely soluble in three parts of 70% alcohol as specified in the U. S. P. In connection with the performance of this test it was noted that 0.5° C. exerts an influence on the solubility; for instance, this oil was not soluble in three parts of 70% alcohol at 25° C., but a clear solution was obtained at 25.5° C.—Reported by J. G. Roberts.

Oil Turpentine, U. S. P. The specific gravity of the 11 samples examined ranged between the narrow limits of 0.859 and 0.862 (U. S. P. requires 0.860-0.870); from 84% to 95% distilled between 115° - 162° C. (U. S. P. requires "the

larger part"); in the U. S. P. test for "absence of petroleum, paraffin oils or resin" from 0.0014 gm. to 0.0050 gm. residue was obtained (U. S. P. requires "a very slight residue"); and answered all other U. S. P. requirements. A certain time limit for letting the "dark mass" settle should be specified in the U. S. P. test for "absence of petroleum benzin, kerosene and similar hydrocarbons."—Reported by T. Liberati.

All of the turpentine samples examined have been of U. S. P. quality with the exception that they were not water white. They all had a light yellow color. Recent samples were almost water white.—Reported by J. G. Roberts.

Oleic Acid. A lot marked technical was examined which had a congealing point of 11.5° C. As the congealing point depends on the proportion of Palmitic and Stearic Acids present, it is quite evident that the high congealing point obtained in this instance is due to the presence of an abnormal amount of Palmitic and Stearic acids which have a higher congealing point than oleic acid.—Reported by J. G. Roberts.

Ox Gall, Powdered. None of the 7 samples examined were completely soluble in alcohol; 2, in addition were not entirely soluble in water; all gave the U. S. P. identification test, and clear solutions were not precipitated by an equal volume of alcohol. These oxgall samples seem to be simply dried and powdered oxgall, unpurified.—Reported by C. E. Meddo.

Pancrcatin, U. S. P. Only one of the 7 lots examined assayed below the U. S. P. standard of 1:25, namely, 1:20, in starch converting power. One of the lots possessed a bad odor.—Reported by Geo. E. E'we.

The rejection of two lots was recommended because they had a benzin odor.—Reported by J. G. Roberts.

Papain. Of 19 samples examined 2 were up to standard (1:100), 4 were about 1:75 and 13 were about 1:50 or less in coagulated egg albumen digesting power.—Reported by L. H. Glickman.

Peroxide Bleach. A sample of so-called Peroxide Bleach submitted for examination had the following composition: Barium Sulphate 66.67%, Barium Phosphate 5.74%, Oxalic Acid 25.52%, undetermined and moisture 1.47%.

From the composition of this substance we infer that it is a by-product in the manufacture of hydrogen peroxide and that oxalic acid has been added to give it bleaching properties. This inference is strengthened by the fact that only a very small quantity of peroxide was found.

The use of the term "peroxide bleach" therefore is misbranding as it contains no peroxide other than the small quantity mentioned.—Reported by J. G. Roberts.

Pepsin Scale, U. S. P. Eighty-seven of the 95 lots examined assayed 1:3000, the other 8 lots assayed 1:2500.—Reported by L. H. Glickman.

One lot was rejected because it had a putrefactive odor.—Reported by J. G. Roberts.

Pepsin, Soluble, Powdered. Five of the 6 lots examined assayed 1:3000; the other lot assayed 1:2500. Reported by L. H. Glickman.

Pepsin, Insoluble, Powd. Nineteen of the 20 samples examined assayed 1:3000, the other one assayed 1:2500.—Reported by L. H. Glickman.

Petroleum. A sample of West Virginia Crude Petroleum was considered un-

satisfactory because it contained a large portion of lumpy material which prevented it from flowing smoothly.—Reported by J. G. Roberts.

Phenol, U. S. P. Usually there is but little trouble in obtaining carbolic acid that conforms to the requirements given in the U. S. P., but during the past six months we received one lot that had a pink color and another lot that had a low congealing point and a distinct yellow color.—Reported by J. G. Roberts.

Phosphoric Acid, U. S. P. All of the samples examined were of good quality with the exception of one trial sample which had a dark color.—Reported by J. G. Roberts.

Podophyllin. Six of 12 samples examined tested slightly below the U. S. P. standard of 99% soluble in alcohol, 98.9%, 95.2%, 98.1%, 98.9%, 97.9%, and 98.7% respectively. Three of the 12 samples assayed slightly more than the 1% ash allowed by the U. S. P., 1.2%, 1.2%, and 1.1%, respectively.—Reported by G. E. E'we.

Potassium Arsenite. The 19 lots examined ranged between 87.2% and 91.5% KAsO_2 plus HAsO_2 plus H_2O .—Reported by Carl E. Meddo.

Pumice Stone. A consignment of this material had a peculiar yellowish gray color which is quite different from the color of any sample previously examined. The National Standard Dispensatory states that pumice stone has a whitish gray and sometimes a bluish color.—Reported by J. G. Roberts.

Pyroligneous Acid. Two lots were examined and were found to contain 6.5% and 6.8% respectively of acid calculated as acetic acid.—Reported by J. G. Roberts.

Quinine, U. S. P. A sample labeled "Quinine Pure U. S. P., VIII," was anhydrous instead of containing three molecules of water.—Reported by Geo. E. E'we.

Quinine Sulphate, U. S. P. Four of the samples examined were effloresced, causing assays of 103.0-102.3-103.7 and 101.4% crystallized quinine sulphate.—Reported by Geo. E. E'we.

Rennin. A lot of rennin which assayed 1:50,000 in milk coagulating power, assayed only 1:13,000 thirteen months later. The diluent of the rennin consisted of sodium chloride and milk sugar and was free from boric acid or other preservatives. The rennin possessed an odor resembling putrid peptones when last examined.

One sample labeled "Sweet Rennin Powder—1:2500" assayed 1:2500.—Reported by Geo. E. E'we.

Sanguinarine Nitrate. Continues to assay very low; the 4 lots examined assayed 37.7%, 40.7%, 40.7% and 40.1% respectively.—Reported by W. H. Orrick.

Scammony Resin, U. S. P. The 2 samples examined assayed 65.8% and 56.7% soluble in ether (U. S. P. requires "almost completely"), but answers all other U. S. P. requirements.—Reported by Geo. E. E'we.

One lot was looked upon with suspicion because it did not give satisfactory results with the sulphuric acid identity test and also because it contained such a large amount of ether insoluble material.—Reported by J. G. Roberts.

Soap, U. S. P. The samples examined ranged from 10.5% to 27.0% moisture.—Reported by Geo. E. E'we.

Terebene, U. S. P. It seems to be impossible to obtain Terebene that conforms to the requirements given in the U. S. P. Three samples from different sources were examined. They all contained an abnormal amount of resinous substances and yielded 68 to 88% of distillate between 160° C. and 170° C. One sample had a high specific gravity and another was optically active. The U. S. P. states that it should be optically inactive and that it should be completely distilled between 160° and 170° C.—Reported by J. G. Roberts.

Yellow Wax, U. S. P. A trial sample was rejected because it gave unfavorable results with the U. S. P. paraffin and ceresin test and also because it had a low specific gravity and saponification number indicating contamination with a foreign substance.—Reported by J. G. Roberts.

The following table shows the results of 382 crude drug assays made in the Analytic Laboratory of the H. K. Mulford Company from June 1, 1912, to June 1, 1913:

					No. above Stand- ard	No. below Stand- ard
Drug	No. of Assays	Lowest Assay	Highest Assay	Aver.	Standard	
Aconite Root.....	10	0.272	0.800	0.433	0.5% Aconitinè.....	2
Belladonna Leaves...	18	0.253	0.515	0.420	0.3% Mydr. Alk.....	16
Belladonna Root.....	11	0.340	0.724	0.521	0.45% Mydr. Alk.....	8
Calabar Bean.....	7	0.095	0.196	0.146	{ 0.15% Ether soluble al- kaloids	3
Cannabis Indica.....	1	14.0	14.0	14.0	10% resin.....	1
Cantharides, Russian.	21	0.292	1.130	0.604	0.6% Cantharidin.....	12
Capsicum	7	13.1	18.1	16.4	10% Oleoresin.....	7
Cinchona Red.....	27	5.36	10.28	7.63	{ 5% total anhydrous al- kaloids	27
Cinchona Yellow.....	1	6.34	6.34	6.34	{ 5% total anhydrous al- kaloids	1
Coca Leaves.....	4	0.353	0.928	0.713	{ 0.5% Ether soluble al- kaloids	3
Colchicum Corm.....	5	0.314	0.496	0.365	0.35% colchicine.....	2
Colchicum Seed.....	3	0.539	0.745	0.626	0.45% colchicine.....	3
Conium	2	0.513	0.622	0.568	0.5% Coniine.....	2
Cubebs	1	21.8	21.8	21.8	15% Oleoresin.....	1
Digitalis	20	0.213	0.450	0.316	0.25% Digitoxin.....	18
Ergot	13	0.107	0.347	0.218	{ 0.15% Cornutine of Keller	10
Frangula	1	1.37	1.37	1.37	1.25% Emodin.....	1
Gelsemium	15	0.178	0.640	0.448	0.4% alkaloids.....	11
Ginger, African.....	17	6.85	9.92	8.42	6% Oleoresin.....	17
Ginger, Jamaica.....	37	3.10	5.75	4.37	4% Oleoresin	24
Guarana	2	4.33	4.62	4.48	3.5% alkaloids.....	2
Hyoscyamus	33	0.043	0.234	0.082	0.08% Mydr. Alk.....	14
Hydrastis	6	2.90	4.09	3.41	2.5% Hydrastine.....	6
Ipecac	15	1.73	2.63	2.13	1.75% alkaloids.....	14
Jalap	11	4.53	9.66	6.73	7% total resin.....	4
Kola Nut, Fresh.....	1	1.35	1.35	1.35	0.65% alkaloids.....	1
Mandrake	11	3.64	5.98	4.91	4% Resin.....	9
Nux Vomica.....	34	0.523	1.390	0.950	1.25% Strychnine.....	4
Opium Gum.....	5	10.50	12.27	11.45	{ 9% Crystallized Mor- phine	5
Opium, Powd.....	13	11.95	12.75	12.26	{ 12-12.5% Crystallized Morphine	12
Sanguinaria	15	2.52	6.04	4.21	2.5% alkaloids.....	15
Stramonium Leaves...	14	0.170	0.618	0.297	0.25% Mydr. Alk.....	8
Veratrum	1	1.72	1.72	1.72	1% total alk.....	1
Total	382					264
						118

Comparison with reports sent in previously:

Year	Report	Total	Above	Below	Percent above
1909	Report	395	313	82	79.3
1910	"	340	291	49	85.6
1911	"	263	224	39	85.1
1912	"	298	235	63	78.8
1913	"	382	264	118	69.1

Last year, a lowering of the percentage of samples above standard, to 78.8% from the 85.1% of the previous year, was due principally to the poorer quality of Ergot, Ipecac, Jalap, Mandrake, Nux Vomica and Stramonium. This year's summary shows a further lowering of percentage of samples above standard down to 69.1%, due this time principally to Aconite, Physostigma, Cantharides, Colchicum Corm, Hyoscyamus, together with three of last year's offenders,—Jalap, Nux Vomica and Stramonium,—Ergot, Ipecac and Mandrake having reformed. So it goes with the vagaries of seasons.

LABORATORY NOTES.*

GEORGE E. EWE AND CHARLES E. VANDERKLEED.

An Improvement in the Assay of Emodin-Containing Drugs.—For many years it has been customary for us to assay the emodin-containing drugs, cascara, rhubarb, senna and buckthorn, for the total amount of oxymethylantraquinines, or emodin, yielded by the glucosides present in the drugs. While it has been known that the total cathartic action of these drugs is not due to the glucoside yielding emodin, a minimum emodin standard is undoubtedly of value in excluding inferior drugs and preparations. The method which we have used for estimating the emodin content of these drugs has already been published in these Proceedings.

Like many other assay processes, however, this one has given reliable or concordant results only when carried out under certain definite conditions. During the past year, in an effort to make these conditions uniform and invariable, we have adopted the following procedure as a substitute for the more general directions of the earlier published assay:

Sample equivalent to 0.2 gm. emodin, calculating size of sample from standard of drug and preparation. Place into 100 cc. 2 percent alcoholic KOH contained in a flask on sand (100 gms.) Boil under reflux one hour, allow to cool one-half hour, pour off liquid through cotton into cylinder. Repeat extraction three times, and evaporate in dish on water bath until nearly dry. Dissolve residue in 5 cc. water, transfer to separator, making final volume 25 cc. Add 60 cc. ether, then 10% H_2SO_4 , 5 cc. at a time, until acid to litmus, then add 2 cc. more, shake for 3 minutes, allowing to separate. Draw off aqueous layer to a second separator, pour ether through cotton into a 400 cc. beaker. Repeat the extraction with 60 cc. ether three times, reject aqueous layer, evaporate the other extractions on water bath to small volume. Add 20 cc. stronger ammonia water, heat

* Presented to the Pennsylvania Pharmaceutical Association, June, 1913.

on steam bath until nearly dry, add 10 cc. water, warm, add 10 cc. 10% H_2SO_4 , warm 15 minutes, with almost constant stirring, cool for 15 minutes, filter on small filter into a separator. Wash beaker and filter with water until total volume is 35 cc. Place the filter paper into the beaker used in heating treatment with sulphuric acid, add 15 cc. 5% sulphuric acid, heat on steam bath with almost constant stirring for 15 minutes. Cool for 15 minutes, filter on small filter into the separator containing the first filtrate, wash the beaker and filter with water until free from acid. Total volume of both filtrates must be 70 cc. Shake out with four portions of 60 cc. ether each, evaporate in tared flask, dry at not more than 60°C . for two hours and then in desiccator to constant weight.

Boric Acid as a Preservative for Urine for Analysis.—We recently had occasion to manufacture a large quantity of Boric Acid Tablets, 2 grains, for one of the large life insurance companies, the tablets to be used by its department of medical inspection for the preservation of urine samples. We made an interesting test of the effectiveness of these tablets for the purpose for which they were intended. One tablet dissolved in four fluidounces of a urine sample preserved it for six days, whereas the control sample "spoiled" in about three days. When two tablets were used, a four-ounce sample was preserved for nine to ten days. The preserved samples remained clearer throughout, and as the presence of the boric acid does not interfere with the ordinary tests usually applied to urine samples, the value of this method is evident.

What is Terra Alba?—In the American Journal of Pharmacy for February, 1913, Professor Charles H. LaWall asks "What is Terra Alba?" Reference to older text books and dispensaries discloses the fact that in times past at least, terra alba was considered to be a silicate of aluminum. Recently an examination of fourteen samples from ten firms shows that the trade today considers it to be a non-setting form of calcium sulphate. For many pharmaceutical purposes, the present day terra alba is unsatisfactory, as it slowly reacts with carbonates in the presence of moisture, and for this reason is unsatisfactory as a diluent.

Phenol Used for Determining Bactericidal Power.—Not a few of the discrepancies that often occur in the reports of various laboratories on the phenol coefficient of disinfectants are undoubtedly due in part at least to variation in the phenol used as a standard. If the phenol used be contaminated with its higher homologues, which have greater bactericidal power, the sample is compared with too high a standard and the result of the test is too low. The assay of the supposed 5 percent solution does not provide a means for detecting the presence of higher homologues, but the U. S. P. provides a test which is serviceable for this purpose. The U. S. P. requires that phenol liquified by gentle heat, should have a congealing point not lower than 39°C ., since traces of cresols, etc., tend to lower the congealing point.

A source of error may arise, however, in attributing a lower congealing point to the presence of higher phenols. We have found that a low congealing point may be due to the mere presence of moisture in amounts far short of causing liquefaction of the crystals. It is important, therefore, that the sample be first dried in a desiccator for several hours before subjecting it to the congealing-point test.

Effect of Vacuum Preservation on Precipitation.—In preserving galenical

preparations of ergot, digitalis, etc., in vacuoles or vacuum ampuls, it is necessary of course to place them in the vacuum containers as quickly as possible after the testing and adjustment to definite strength has been accomplished. Noting that the usual slight precipitation of inert extractive matter took place in the vacuoles after some days, we set about to determine whether this tendency to precipitate is increased by the vacuum treatment and if so, whether this was caused in part by a slight loss of alcohol during the evacuation of the containers. The following table shows the amount of precipitate by volume present in the same lot of preparation put up in ampuls "with" and "without vacuum" and both with and without 2 percent added alcohol.

Tests were made at intervals of one month after sealing the ampuls.

	March 28	April 28	May 28
F. E. Ergot without vacuum.....		0.27%	0.34%
F. E. Ergot without vacuum, with 2% added alcohol..		0.55%	0.3%
F. E. Ergot with vacuum.....		0.28%	0.3%
F. E. Ergot with vacuum, with 2% added alcohol.....		0.3%	0.5%

It is perfectly apparent from this table that the use of vacuum in no way increases the amount of precipitation, and it furthermore shows that the addition of an extra 2 percent of alcohol in no way retards this precipitation. The ampul which contained 0.55 percent of precipitate on April 28 seems to have been a sort of exception.

The table also seems to prove that most of the precipitation occurred soon after these ampuls were filled, and that during the last month not a great deal of precipitate was added to that which originally formed.

It is needless to say that this precipitate represents only inert matter, as many tests in our laboratories have shown that these preparations retain their full activity when preserved in this manner.

Limit of Codein in Morphine.—It has been reported in several of the journals during the past year that the morphine sulphate on the market has contained considerable quantities of codein amounting in some cases to 7 percent. We have examined a considerable number of samples by the method given by Williams in the September, 1912, number of the American Journal of Pharmacy, which is practically the same method as will be incorporated in the new Pharmacopoeia. We also tested the samples by the methods of the Netherlands, Swiss and Japanese Pharmacopoeias, which are essentially the same, except that the residue of codein is weighed. In no case did we find more than 1.29 percent codein sulphate by the gravimetric methods, nor more than 0.94 percent by the volumetric method. This, however, in no way controverts the statements that some of the morphine on the market contains larger quantities of codein, as all our samples were from one source.

Estimation of Morphine in Tablets.—During the past few years, a number of solvents and mixtures of solvents have been proposed for the extraction of morphine in the assay of morphine preparations. For example, some time ago Thorburn¹ proposed the use of phenyl ethyl alcohol as a suitable solvent for this purpose. Engelhardt² has recently proposed a mixture of isobutyl alcohol and

¹ Journal Industrial and Engineering Chemistry, October, 1911.

² Deutsche Americanische Apotheker Zeitung, 1913.

chloroform for this purpose. The method which has given the best results in our hands, however, is that of Bernegau and Heidelberg, published in last year's Proceedings. We have slightly modified the method as follows:

Dissolve sample equivalent to 0.2 gm. or less of morphine in not more than 15 cc. of water (insoluble matter does not cause emulsions) in a separator, add 50 cc. of amyl alcohol, make alkaline with ammonia and heat on steam bath for 10 minutes, shake for 5 minutes and allow to stand until cold. Draw off aqueous layer into a second separator and pour the amyl alcohol into a 300 cc. Erlenmeyer flask containing a few grains of sand. Repeat the extraction with amyl alcohol twice. Distill off the united amyl alcohol solutions in an oil bath just to dryness. (Do not overheat). Blow out the vapors of amyl alcohol and dissolve the residue of morphine alkaloid in 20 cc. of N/20 sulphuric acid with the aid of chloroform and heat. Titrate back with N/50 potassium hydroxide, using methyl red as indicator.

In a series of experiments, while we obtained from 0.5 to 0.76 percent more than the theoretical quantity of morphine sulphate by the amyl alcohol method, we obtained from 5 to 13 percent less than the theoretical by the phenyl ethyl alcohol method, and from 4.7 to 7.5 percent less than the theoretical by the isobutyl alcohol method.

ANALYTICAL LABORATORY OF H. K. MULFORD COMPANY, June 20, 1913.

OREGON AND CANADA BALSAM OF FIR.*

J. G. ROBERTS AND M. M. BECKER.

Considerable difficulty has been experienced in the past year or two in obtaining Canada Balsam of Fir (*Terebinthina Canadensis*). It is stated that it is practically unobtainable at this time and that there will be none available until the next crop has been gathered. In view of this fact, it has become necessary to find a suitable substitute. Accordingly there is considerable Oregon Balsam Fir now being offered to the trade. This is an allied natural product and bears a close resemblance to the better known Canada Balsam of Fir.

As information regarding Oregon Balsam of Fir is exceedingly meagre it became necessary in order to obtain data that would assist in establishing the identity and purity of given samples to obtain some Oregon Balsam of Fir from a known source. Such a sample was procured through the courtesy of Mr. R. G. Bailey, who guaranteed that it was a genuine sample of Oregon Balsam of Fir. It is very similar in color, odor and taste to the Canada Balsam but it is noticeably thinner.

We have examined several lots of Oregon Balsam of Fir that were purchased on the open market and have noted several points of difference between them and

* Presented to the Pennsylvania Pharmaceutical Association, June 11, 1913.

the Canada Balsam. At this time we will make comparisons between the results obtained on the authentic sample and the results obtained on previous lots. In this manner sufficient data may be obtained that will aid in distinguishing the Oregon Balsam from the Canada Balsam.

Canada Balsam of Fir is recognized both by the U. S. and the British Pharmacopœias. But with the exception of the customary description, the magnesium oxide test and the various solubilities there are no tests in either of them that would aid in establishing its purity or identity. In view of this fact it has been our custom to compare our results with standards given in the British Pharmaceutical Codex and in Allen's Commercial Organic Analysis, Vol. 4.

The chief differences that we have observed between the Canada and the Oregon Balsams are in the viscosity, the solubility in alcohol and in the character of the magnesium oxide test. The Oregon Balsam is thinner than the Canada Balsam. It is also completely soluble in alcohol, whereas the U. S. P. Balsam yields a turbid solution on the addition of alcohol. Canada Balsam conforms to the U. S. P. magnesium oxide test which requires that the Balsam should solidify when mixed with 20% of its weight of magnesium oxide previously moistened with water. The Oregon Balsam does not solidify even when mixed with 60% of its weight of magnesium oxide. The addition of the excess of Magnesium Oxide causes a separation of the water used for moistening. The resulting mixture is stiff but it does not have the same consistency as the Canada Balsam test.

The Oregon Balsam does not dry as readily as the Canada Balsam. A drop spread on a glass plate was still sticky at the end of three weeks, while some of the Canada Balsam under the same conditions was noticeably drier and did not adhere to the finger when touched. This fact leads us to the conclusion that the Oregon Balsam is not as suitable as the Canada Balsam for microscopical work.

As previously stated, neither the U. S. P. or the B. P. give chemical constants for Canada Turpentine. The British Pharmaceutical Codex states that it should have a specific gravity of about 0.987 to 0.994 at 15.5° C., an optical rotation of +10° to +4° and an acid number of 80 to 87. Allen quotes an acid number of 80 to 87, an ester number of 4 to 10, and states that it contains a resin which is difficultly soluble in alcohol. In Squire's Companion to the British Pharmacopœia we find that the optical rotation of the distillate should be from -26° to -29°. All of the samples of Canada Balsam that we have examined compared favorably with the above standards.

The specific gravity of the Bailey sample is within the limits quoted for Canada Balsam. As a matter of fact, these limits seem to apply to Oregon Balsam generally as the specific gravity of all our samples have been well within these limits.

The optical rotation of the Bailey sample is +8° 36'. This is higher than what was obtained on other samples as they have ranged from -2° 52' to +0° 42'.

As a rule, the optical rotation of the distillate is a better method of determining the difference between the Canada and the Oregon Balsams. But the optical rotation of the distillate obtained from the Bailey sample is -26° 30', which is well within the limits given for the distillate of the Canada Balsam. Previous

samples had optical rotations, ranging from $-34^{\circ} 43'$ to $-41^{\circ} 3'$. These are all higher than the standard of -26° to -29° , given by Squire.

Generally the acid number is a satisfactory means for establishing the difference between the Canada and the Oregon Balsams. With one exception all of the samples of Oregon Balsam examined have had an acid number above 87. The following are the acid numbers obtained on the various samples: 100.5, 100.8, 105.82, 106.75 and 111.

The ester number is valueless as a means of identity. With the exception of one sample of Oregon Balsam which had an ester number of 13.9, all of the samples had ester numbers within the limits of 4 to 10, given by Allen for Canada Balsam.

The following is the analytical data obtained on the Bailey sample of Oregon Balsam of Fir:

Specific gravity at 25° C.....	0.9865
Specific gravity at 15° C.....	0.9930
Solubility in 95% alcohol.....	Completely
Solubility in 90% alcohol.....	Completely
Solubility in ether.....	Completely
Solubility in chloroform.....	Completely
Solubility in benzene.....	Complete
Optical rotation direct when taken at 25° C.....	$+8^{\circ} 36'$
Optical rotation of distillate when taken at 25° C.....	$-26^{\circ} 39'$
Boiling point.....	157° C. to 230° C.
Acid number.....	111
Ester number.....	5.25
Saponification number.....	116.25

Conclusion.—It is rather difficult to establish data for determining the points of difference between substances of similar origin such as Canada Balsam of Fir and Oregon Balsam of Fir. In this investigation we have found that the most reliance can be placed on the viscosity, the magnesium oxide test and the solubility in alcohol. None of the samples of Oregon Balsam have answered the U. S. P. magnesium oxide test; they are all thinner and completely dissolve in 95% alcohol. All of the samples of Canada Balsam of Fir have given satisfactory results with the U. S. P. magnesium oxide test and are not completely soluble in alcohol. They have also compared favorably to the standards given by the British Pharmaceutical Codex, Allen's Organic Analysis and in Squire's Companion to the British Pharmacopœia. As previously stated, the acid number is a good indication, as the acid number of Oregon Balsam is usually higher than the acid number of the Canada Balsam.

On account of our limited experience with Oregon Balsam of Fir and also because the sample under discussion is the only one that we have obtained from a guaranteed source, we are unable to suggest standards that would differentiate between a natural and an artificial Oregon Balsam of Fir. But we feel confident that the data given above will be useful in determining that point.

ANALYTICAL DEPARTMENT, SMITH, KLINE AND FRENCH COMPANY.

SOCOTRINE ALOES.*

C. J. DENNEHY.

The U. S. P. description of aloes includes the inspissated juices of *Aloe vera* (Linne) Webb, the common type of curacoa aloes, *Aloe Perryi* or typical socotrine aloes, and other species such as Natal and Cape aloes under one general heading.

It states that aloes should be "in yellowish brown to blackish brown opaque masses, translucent in thin fragments; fracture uneven, dull and waxy, somewhat resinous or smooth and glassy, somewhat conchoidal; occasionally exhibiting microscopic crystals of aloin; odor characteristic; taste nauseous, bitter."

This definition, though wide enough to cover all varieties of genuine aloes, fails to describe some samples as imported. Aloes, both socotrine and of other varieties, has often been imported into Britain, and the United States, in barrels and in a pasty condition which renders the U. S. P. description as regards the article as received by the wholesalers or submitted to them for analysis, of no avail. It is then up to the chemist of the wholesale houses either to reject the shipment as abnormal on its physical appearance or being satisfied after testing for chemical identity and purity, to state that if dried the sample would be of proper U. S. P. quality.

The importation, however, of these pasty aloes is not to be encouraged. They nearly all contain about twice the amount of water allowed by the U. S. P., and there is no reason why the product containing excessive moisture should be shipped, as they are pasty and difficult to handle.

The following analyses of socotrine aloes obtained in the laboratory of the Smith, Kline & French Company, are typical of these humid aloes:

<i>Socotrine Aloes</i>	No. 50.	"Caled"	No. 52	No. 54	"M"
Physical Appearance.....	Abnormal	Abnormal	Abnormal	Abnormal	Abnorm.
Odor and Taste.....	Normal	Normal	Normal	Normal	Normal
Reaction with Nitric Acid....	Normal	Normal	Normal	Normal	Normal
Reaction with NaOH.....	Normal	Normal	Normal	Normal	Normal
Moisture	23.48	19.58	12.08	20.48	19.00
Reaction with Sodium Borate	Normal	Normal	Normal	Normal	Normal
Amount from 5 gms. insoluble in 60 cc. of water on cooling	1.914	1.990	2.278	1.954	1.998
Alcohol test for gums, dex- trins and impurities.....	Abnormal	Abnormal	Abnormal	Abnormal	Abnormal
Ash	4.5	3.64	16.22	4.12	5.5
Nitric and sulphuric acid test for absence of Barbadoes and natal aloes, N. S. D.,	Negative	Negative	Negative	Negative	Negative

As the above samples were submitted for an U. S. P. examination, all were rejected, as they contained about twice the amount of water allowed by the

* Read before the Pennsylvania Pharmaceutical Association, June, 1913.

U. S. P., besides which they failed to pass the alcohol test for the limit of gums, dextrins and impurities.

Even if the samples were dried until they had the prescribed water content of 10 percent, the amount of water insoluble substance would then be above the limit allowed by the Pharmacopoeia.

For instance, sample marked No. 50 would then have 2.251 grams of water insoluble substance; sample marked "Caled," 2.227; sample No. 52, 2.472; sample No. 54, 2.221, and sample "M," 2.222.

While the U. S. P. contains no standard for the ash of socotrine aloes, both Kraemer and Parry state that it should not yield more than 4 percent, while Squire's Companion to the British Pharmacopoeia, 1908 edition, places the ash limit of socotrine aloes at 3 percent.

Though the ash of all these samples was slightly high and in conjunction with the alcohol and water soluble tests afforded corroborative evidence of impurity, yet in only one case was it considered sufficiently high to cause the rejection of the sample.

This sample which is marked "Caled," also contained a considerable quantity of hair, probably due to its having been packed in skins, in which, according to Squire, it is sometimes imported into Britain.

An interesting fact is emphasized in an article on the products of the Island of Socotra by Dr. Miller, *JOURNAL A. PH. A.*, August, 1912. He does not mention socotrine aloes as one of these products, but draws special attention to the statement in Brockhaus' Conversations Lexicon, 1908, that at present no aloes whatever is obtained from Socotra. He also states that almost all the aloes then sold as socotrine was probably from Zanzibar, Moka, and other countries.

In this connection it is of interest to note that Dr. Rusby, in his report on the Drug Market for 1911, stated that Moka aloes had been supplied for socotrine to American manufacturers and dealers. "Though geographically classed with socotrine aloes, it was from every other point of view entirely distinct and as inferior as it was distinct. The substance is black and soft like thin tar and is exceedingly disgusting in odor and taste. It contains a much larger percent of albuminous matter than official aloes."

The rejection of moka aloes by the Federal authorities led at the time (1911) to vehement protests from the European shippers. The latest report on the Drug Market in 1912 *JOURNAL A. PH. A.*, June, 1913, stated that Moka aloes had practically disappeared from the market. The sample "M," rejected by our laboratory, which containing a decided amount of substance soluble in cold alcohol and being in a pasty condition, was not very different in odor from normal samples.

Internally, it presented the appearance of a brown paste, covered where exposed to air by a brown to jet black shining surface, but when dried in thin laminae on a watch glass, the color was normal.

ANALYTICAL DEPARTMENT, SMITH, KLINE & FRENCH Co., Philadelphia, Pa.

WHAT IS THE QUALITY OF THE PANCREATIN ON THE MARKET?*

CHARLES H. LAWALL, PH. M., PHILADELPHIA.

To answer such a query satisfactorily would require a knowledge of the subject not readily obtainable by a single individual, for the quality of pancreatin offered to a large manufacturing establishment where an analytical laboratory is maintained would doubtless differ from that offered to a small consumer who is known to have no facilities for testing the product. A case in point which illustrates the necessity for some kind of a careful supervision of purchases and at the same time emphasizes the ingenuity and lack of principle of a seller of pancreatin, was recently observed by me.

A sample of pancreatin was offered to a manufacturing pharmacist who maintains no analytical department and by him submitted to me for examination. The customary tests were applied of determining its peptonizing power upon milk and its converting power upon starch. The unusual condition was observed of a sample which possessed a high diastatic power in converting starch and a low peptonizing power upon milk. It was further noticed that an unusually large proportion of the material remained undissolved by water and upon a closer examination, both physically and microscopically, revealed the fact that the article in question consisted partly of powdered malt. This, of course, had the effect of raising the starch converting power and as this test is sometimes the only one applied, and as the appearance of the material in the small sample submitted was normal, the producer of this spurious product was simply taking a chance, probably counting upon no thorough examination of the sample being made.

DETECTION OF CANE SUGAR IN HONEY.†

CHARLES H. LAWALL, PH. M., PHILADELPHIA.

By the above query I suppose is meant the detection of *added* cane sugar in honey for it is an established fact that sucrose normally exists in cane honey to the extent of as high as 8 percent, which is the maximum amount permitted by the standards of the U. S. Department of Agriculture.

There are no color reactions or simple chemical tests for the differentiation or distinction of any of the sugars and these are detected only by inferential tests based either upon the reducing power before and after inversion or by the optical activity under similar circumstances. As sucrose is chemically the same whether normally existing in the honey or in the shape of cane or beet sugar and as it is

*Presented to Pennsylvania Pharmaceutical Association, June, 1913, in reply to Query No. 31. What is the quality of the Pancreatin on the market?

†Presented to Pennsylvania Pharmaceutical Association, June, 1913, in reply to Query No. 13. The detection of Cane Sugar in Honey.

the amount rather than the actual presence which decides the genuineness of the article, the only tests of value are the quantitative tests, even were qualitative tests possible, which they are not.

The best method for the determination of cane sugar is by the use of the polariscope and the use of an algebraic formula in connection with the figures obtained for the optical rotation before and after inversion, observations being made at the same temperatures.

By inversion, of course, is meant the hydrolysis of sucrose which, when heated with diluted acids, is converted into dextrose and levulose, the levulose being in excess and the mixture of the two resulting sugars therefore possessing a levorotatory power in contradistinction to the dextrorotatory power of sucrose.

As honey consists largely of invert sugar (from 50 to 80 percent), and as invert sugar is readily prepared from cane sugar in large quantities, it seldom happens that such a clumsy method of adulterating honey as by the addition of cane sugar direct is practiced, when it is possible to convert the same sugar into invert sugar and thus simply add a sugar which is normally present in the honey. Invert sugar, like sucrose, is the same chemically, whether existing naturally or prepared artificially from sucrose, and it would be impossible to detect added invert sugar in honey were it not for the fact that in the process of inversion by any of the artificial methods, a small amount of furfuraldehyde is produced, and as furfuraldehyde is never present in genuine honey and as it can be detected in very minute amounts and with as great certainty as is the case with formaldehyde, it is customary to apply a test for the presence or absence of furfuraldehyde before deciding whether a honey is or is not genuine, even if the proportions and kinds of sugars are normal.

Such a test was years ago devised by C. A. Browne,* and is as follows:

Test 5 cc. of a 1 : 1 solution of the honey in distilled water, in a test tube with 2 cc. of aniline acetate reagent (freshly prepared for the test by mixing 5 cc. of aniline and 5 cc. of water and adding just sufficient glacial acetic acid to make a clear solution), allowing the reagent to flow into the tube gently so as to form a separate layer upon the honey solution. If the tube be then gently agitated so as to slightly but not entirely mix the two layers a red ring or zone will be produced at the point of contact if furfuraldehyde be present, indicating the presence of added invert sugar.

Unfortunately this test is not infallible for when pure genuine honey is heated (as for instance, in the process of clarification when heat is sometimes used), furfuraldehyde is also formed and the test is of no value therefore unless applied to honey which has been known to never have been heated.

In conclusion I would say that it is not possible to detect cane sugar in honey in the sense of a qualitative test; that, as cane sugar is normally present in small amounts, its quantitative determination, preferably by means of the polariscope, becomes necessary; that the form in which sugar is added usually is that of invert sugar which can be readily detected in honey which has never been subjected to heat.

*U. S. Dept. of Agriculture Bureau of Chemistry Bulletin 110, p. 68.

A SIMPLE DEVICE FOR HANDLING HOT EVAPORATING DISHES.*

CHARLES H. LAWALL, PH. M., PHILADELPHIA.

The lifting, holding or transferring of a hot evaporating dish is frequently very inconvenient. The crucible tongs, although sometimes used, are not well adapted for the purpose of handling any but the smaller dishes. For handling dishes varying from six inches in diameter upward they are very risky to use.

Test tube holders are even less well adapted than crucible tongs and the method which is frequently or one might say, generally employed, that of using a towel or a piece of cloth, is decidedly unsatisfactory and unprofessional.

A satisfactory device which may be made in a few minutes by anybody who has a large cork and a sharp penknife has been in use by me for a long time with great success.

Take a No. 10 or 12 cork and beginning at the small end, cut a slit in it slightly wider than the thickness of the dish and running back about three-fourths the length of the cork. When completed, this makes a springy handle which can be slipped over the side of the dish and firmly grasped with the fingers without danger either of burning them or contaminating the contents of the dish. For large or heavy dishes, two of the improvised handles may be used, one being slipped over each side of the dish when it is to be moved.

PHARMACISTS THAT I HAVE MET.

JAMES G. STEELE, SAN FRANCISCO.

WILLIAM M. SEARBY.

In the year 1865, I had occasion to visit the drug store of H. P. Wakelee & Co., in the Occidental Hotel, on the corner of Bush and Montgomery streets (at that time I was in the employ of William H. Keith & Co., No. 521 Montgomery street). I met a pleasant voiced gentleman behind the counter, who, after some conversation, referred me to Mr. Stroud, an English pharmacist then in charge of the establishment.

My short talk with Mr. Searby was the commencement of a friendship that lasted forty-five years, until his death in October, 1910. This friendship strengthened with the passing of years and was of much benefit to me in many ways.

Mr. Searby was educated in England (his native country) and passed successfully through the different examinations in London, the headquarters of the British Pharmaceutical Society, until the *major examination* was reached, when he passed with "flying colors" and was granted the legal title of "Pharmaceutical Chemist." After some years of business partnership with his brother, Wright Searby, he made up his mind to go to America and so took ship for Vie-

*Presented to Pennsylvania Pharmaceutical Association, June, 1913.

toria, British Columbia, where he arrived with a stock of goods and fixtures in 1860.

He passed the next five years in Victoria with varying fortunes, marrying meanwhile a young English lady by name Pidwell, and finally resolved to go to the "States," taking steamer and landing in San Francisco in 1865. He soon obtained employment with Wakelee & Co. After his engagement with the Wakelee firm, he started a store in 1866 at the corner of Fifth and Mission streets, where he did business until he moved to No. 871 Market street in 1875. He remained there in active business until with his partner, Mr. Zeilin, he moved his stock and fixtures to the corner of Stockton and Sutter streets, where they carried on a very successful drug business until the great earthquake and fire of April, 1906, when in common with one hundred other pharmacies the store was utterly destroyed.

In 1868 the store of William H. Keith & Co. came into my possession, my uncle, William H. Keith, retiring. At the instigation of William Simpson, an old-time apothecary, I visited several representative men in our vocation and got them to promise to attend a meeting at my store for the purpose of taking into consideration the necessity and feasibility of starting a pharmaceutical society. At the appointed time, eighteen attended and after much discussion it was resolved to call a general meeting of the druggists of San Francisco to meet in one of the public court rooms in November. Mr. Searby was present at this initial conference. He also attended the meeting held in November and was elected President of the new association which was called the "California Pharmaceutical Society." In after years the wisdom of this general title was seen. Fully one-half of the membership of the society was made up of "country druggists," all of whom were zealous in the cause and all enthusiastic admirers of Mr. Searby.

Mr. Searby held the office of President until 1878 and was re-elected in 1885-6. He was always elected one of the trustees at our annual meetings and exercised the best influence in the councils of the society.

In 1872 the California College of Pharmacy was founded. The first Board of Directors were elected at a stated meeting of the California Pharmaceutical Society, and were William M. Searby, William T. Wenzell, J. W. Forbes, William Simpson, John Calvert and James G. Steele. These gentlemen also acted as incorporators of the college according to California law. Rooms were engaged and fitted up in the third story of a brick building on Montgomery street between Washington and Jackson. The following professors were appointed by the board: William T. Wenzell, Chemistry; William M. Searby, Materia Medica; J. Winchell Forbes, Pharmacy, and Dr. Hehrmann Behr, Botany. Several young men matriculated and lectures were inaugurated. Professor Searby early showed great aptitude in teaching and holding the attention of his class. The infant college was affiliated with the University of California according to the scheme of John W. Dorinelle, who drew up the plan of organization providing for the "taking in" of subsidiary colleges.

The College of Pharmacy passed through many vicissitudes and was located in several buildings in different parts of the city, until in the fall of 1899 it came into the possession of and occupied the whole building erected by the state on

land donated by Gustav Sutro on Parnassus avenue, overlooking the Golden Gate Park.

Professor Searby held his professorship with slight intervals all through the years until his death. In the later years he also officiated as the Dean and Secretary of the college. Students of the college during Professor Searby's incumbency were instructed by the clear presentation of a subject commonly slighted and comparatively new to them. They knew something of drugs of course, but their knowledge of *materia medica* was small and vague. The professor's new and clear illustrations brought the subject before their eyes and caused these dry and recondite studies to become of vital interest. He would take, say, the roots of *Serpentaria*, *Spigelia*, *Rheum* and with his pocket lens make clear the special marks and characteristics of each drug. With his pleasant and correct English, he would excite and hold the attention of the students, fixing on their minds the individual nature of each drug, and doing it withal in so beautiful a manner that lessons became of interest and charm. Here, too, was shown year after year the power of teaching by example as well as by precept, which led his pupils to increasing stores of knowledge and proved of aid in their subsequent advancement!

Since the last semi-annual meeting of the California Pharmaceutical Society at Los Angeles in 1892, no semi-annual meetings have been held. The annual meetings were held in San Francisco until 1896. The gift of Gustav Sutro to the Affiliated Colleges of the magnificent site on Parnassus avenue overlooking the Golden Gate Park and much of the "Western Addition" and Richmond District, together with the erection by the State of three imposing buildings devoted to the professions of pharmacy, medicine, dentistry and law so fully occupied the minds of the pharmacists that all interest centered in the College of Pharmacy and the California Pharmaceutical Society was allowed to "go to sleep." Since then, however, the old society has been revived under the name of the California Pharmaceutical Association of which Professor Searby was elected President at the initial meeting held in November, 1907. This association has held annual meetings in different cities of the state and now rejoices in a membership of over 500.

In 1907, Professor Searby was elected President of the American Pharmaceutical Association, the highest honor in the gift of organized American Pharmacy. Mr. Searby had attended several of the annual meetings of the association held mainly in eastern cities and attracted the attention of all by his erudition and graces of manner. As an after dinner speaker he was "*primus inter pares*," equal to the best and always devoting all his thoughts to the uplift of pharmacy.

In 1892 he became editor of the San Francisco Druggist, which publication in 1895 passed into the hands of Redington & Co. In May, 1909, he in conjunction with others deeply interested in the cause of pharmacy published the "Pacific Pharmacist," of which he was made the chief editor. On the death of Professor Searby this publication passed into the hands of Dr. Albert Schneider, a gentleman of rare attainments and a graduate of Columbia University, New York, and one well known to American pharmacists for his writings for the advancement of Pharmacy.

The long connection of Professor Searby with the California Pharmaceutical

Society, of which he was always regarded the responsible and managing head, proved of great value to that and similar organizations in the interests of pharmacists. From the parent society sprang the first Board of Pharmacy (of which Mr. Searby was a member and elected President), the operations of which were confined to the city and county of San Francisco, the said Board being dissolved in 1880, consequent to adoption of the new State Constitution and the vote of the people; the San Francisco and State Retail Druggists' Association, both of which lapsed in 1896; the State Board of Pharmacy, created by the State Legislature in 1892; the Pacific States Pharmaceutical Association, which was merged in 1909 with the Pacific Branch of the American Pharmaceutical Association; the California College of Pharmacy, organized in 1872, and in the same year accepted as one of the Affiliated Colleges with the University of California, various pharmaceutical societies in the State, particularly in the "Bay Cities" (around San Francisco Bay), and divers conventions and committees called from time to time, to consider the needs of modern pharmacy and the requirements of the retail drug business.

All these felt and acknowledged the benefit of the guiding hand of Professor Searby. In all these and kindred organizations he was an honored and hard-working member, filling important positions and arousing in others by power of his own example, high and noble thoughts and purposes. He was dignified by his coadjutors with the title of "Nestor" in Pharmacy of the Pacific coast.

Professor Searby's contributions to Pharmaceutical literature consist mainly of papers on practical Pharmacy, on pharmaceutical education and pharmaceutical legislation, published in the San Francisco Druggist, the Pacific Druggist, the American Journal of Pharmacy, the Proceedings of the American Pharmaceutical Association, the California Pharmaceutical Society and the Pacific Pharmacist.

The more important papers contributed by him to the cause of progressive pharmacy were: On Pills and Pill Excipients; on *Spigelia*; *Materia Medica* for Pharmacists; The Decomposition of Potassium Iodide by Spirit of Nitre; Pharmaceutical Legislation; What Studies Should a Young Man Take up Who Intends to Enter a College of Pharmacy; a Simple Way of Making Simple Syrup; on *Rhamnus Californica* and *Rhamnus Purschiana*; Changes that I have Witnessed in the Drug Business during the Past Forty Years; An Improved Process for Making Compound Cathartic Pills; Standardizing Galenic Preparations; on Radam's Microbe Killer; Revision of the U. S. Pharmacopœia; Poison Laws; on Weights and Measures; Old versus Modern Pharmacy; The California State Board of Pharmacy, etc., etc.

In his college work Professor Searby proved himself a teacher of rare ability and great power. Not only did he impart knowledge to the students in the college classes, but unconsciously and unintentionally he impressed upon them the force of a beautiful character. The students, his associates in the faculty and the directors all honored and revered him. Mingling with him in his business life, it was easy to see that "success in business" was not his sole ambition. He never deemed wasted any effort or time that he could give to the betterment of others and many examples could be cited of his entire unselfishness and of his desire to assist in the progress of his fellow beings. He was a man who was

before the public sufficiently to receive national recognition, yet without an enemy. He always stood for honesty in municipal affairs and always opposed "grafting" of all kinds, and yet no one ever wished him ill. Kind, courteous and gentlemanly to all, though never flinching when the right was in question, he "tempered justice with mercy" and won through kindness coupled with firmness. He was a valued and efficient officer of the Presbyterian Congregational Church. His was the true Christian spirit. He led a consistent and blameless Christian life. No one can adequately estimate the good he did while among the living, or the influence of his example after death.

The Board of Directors of the California College of Pharmacy received many tributes of respect for Professor Searby's memory, from numerous organizations and individuals. The Directors and the Alumni Association of the College of Pharmacy passed resolutions of regret and condolence and caused them to be sent to the family of the deceased.

The Secretary of the Board of Regents of the University of California notified the Board of Directors that the Regents had voted to have a marble chair with a proper inscription to the memory of Professor Searby set up in a suitable place within the University grounds.

His name will always be held in grateful remembrance and will be classed with the names of Proctor, Parrish, Cushman, Hoffman, Ebert, Squibb, Rice, Maisch and others who have made it the work of their lives to exalt the cause of true Pharmacy in America.

The professor's devotion to the uplift of Pharmacy in California and the Pacific States had much influence in turning the eyes of the pharmacists to the merit and necessity of organization and was a moving factor in building up the membership of the California Pharmaceutical Association.

In 1912 the Board of Directors of the College had a mural tablet prepared with a suitable inscription to the memory of Professor Searby, and set up on the wall of the college building.

Professor Searby died in October, 1910. One of the deans of the Affiliated Colleges on learning of the illness and nearness to death of the professor, said: "The death of Professor Searby will prove a great loss to the entire student body. He possessed a tender conscience and never did or thought a wrong thing."

KEEPING UP WITH PROGRESS.

The narrow man can't survive. Broader chests and broader foreheads are ready to replace him. The young man is challenging his ability. Unless he constantly renews his vitality and reviews his knowledge—unless he keeps posted and keeps pacing—unless he adds to his mental kit the newer tools of thought and trade—the newer systems and the newer economics—he cannot hope to compete in the after-building.—*Herbert Kaufman.*

Of General Interest

THE NEW ENGLAND LETTER.

ERNEST C. MARSHALL, PH. G.

WOMAN IN PHARMACY.

The last annual banquet of the Massachusetts State Pharmaceutical Association was notable in the fact that at that gathering occurred the first recognition by the pharmacists of Massachusetts of the newly-organized Women's Section of the A. Ph. A., which was most happily represented on that occasion by its President, Mrs. John G. Godding.

The formation of this section, after more than a half century of existence of the A. Ph. A., is strongly indicative of the spirit of the times in which we live, as was also the earlier formation of the W. O. N. A. R. D., which organization was also charmingly represented at the same banquet by Mrs. Jessie F. Waterhouse, the National President, and by Mrs. Mary Cooper, the President of Boston Chapter. The recognition of woman as a co-partner of man in the scheme of life seems nearer to a full realization than ever before in the history of the world. Not alone as a political partner, a suffragette, has woman come to the front in recent years, but she has advanced rapidly in other ways; ways which demonstrate not so much her independence of man, but her true place as the maker of men, into which effort she concentrates a large part of her existence and accomplishes most splendid work, while modestly occupying a retired position, from which coign of vantage she guides and guards, unnoticed and unrecognized, the one in whom her existence, her whole life is centered.

It is only in a condition of barbarism, of selfishness and brutality, that woman is denied her full recognition as the equal and compeer of man. As he develops beyond the primeval instincts, as he becomes elevated above the level of the beast, he learns more and more to appreciate the powerful aid and assistance which his female companion lends to him in such a quiet and

persuasive way as almost to be unnoticed and unappreciated. And it is largely to this aid that many of our so-called great men have been set above their fellows in politics, in literature, in art and in science.

A charming story by Gouverneur Morris, entitled "The Back Seat," which recently appeared in one of the magazines, had for its theme the wife of a secretary of state, who, in a mental breakdown of her husband, carried the country through the diplomacy of a nerve-racking foreign imbroglio, without informing the world of his incapability and inefficiency and brought to his reputation an added lustre, after which service she gracefully retired to "a back seat."

And there are many such instances, not those of fancy, but of absolute recorded and recognized fact, as is attested by many men who have not hesitated like Sergeant Matthew Baguet, to avow their obligations to her whose patient zeal in her obscure place has brought wreaths of laurel to him whom she so efficiently served.

Let us pharmacists, then, welcome to our inmost councils, to all of our associations, to a close fellowship, these Rachels and Leahs of our lives. Let us also each and every one appreciate as a strong support, the one who has given her life to us, who sits behind with untiring patience with mind only intent to serve.

There is a wealth of meaning in the rhapsody:

"She is mine own,
And I as rich in having such a jewel
As twenty seas and all their sands were
pearl,
Their waters silver
And their rocks pure gold."

So I welcome the participation of women in the deliberations of the councils of the A. Ph. A. "Blessed be the tie which binds" her to us in closer bonds, from which must result great good to all, both individual and collective.

Those ancient Greeks, so wise and so ar-

tistic that they teach us something almost every day, made Minerva the Goddess of Wisdom; and Silenus the God of Un-Wisdom and Sensuality, and they gave to the goddess no spouse to interfere with the working of her clear and vibrant mind. Let us then, as we look across the coffee and rolls of our morning breakfast into the clear eyes of the Goddess of our Household, gather inspiration for our day's work, for our struggle against the evil forces in business and make closer communion with her a certain factor to success in all that is worth achieving.

MAINE.

The forty-sixth annual meeting of the Maine Pharmaceutical Association was held at Peak's Island, Portland Harbor, on Wednesday, June 25, to Friday the 27th. Among the delegates to the Association was Dr. Frank Piper of Boston, who represented the Massachusetts College of Pharmacy. Dr. Piper made a short address on being introduced, in which he called attention to the advantages of a scientific education in general and to the special advantages offered by the Massachusetts College of Pharmacy. After the reception of delegates the President delivered his annual address, which was replete with suggestions of value to the Association and the trade. The report of the Secretary showed a total membership of 328. The Treasurer's report showed a favorable financial exhibit. Mr. James A. Broe reported for the Pharmacy Commission and Mr. E. W. Murphy reported for the Committee on Legislation. It was voted to send a copy of the recently enacted narcotic law of the state to every member. The election of officers resulted in the following selections: For President, F. H. Tupper, of Bangor; for Vice Presidents, William H. Wood, D. T. Dougherty, F. W. Butler; for Secretary and Treasurer, Dr. M. L. Porter, of Danforth, who has held the same office for seventeen years. J. A. Broe was recommended for a second term as Commissioner of Pharmacy, and F. H. Tupper, E. W. Murphy, T. H. Davis, J. F. State and E. F. Carswell were appointed as delegates to the American Pharmaceutical Association. After the meeting the members embarked on board of a special steamer and were taken on a trip about Casco Bay, stopping at Great Diamond Island, where by permission of the

Secretary of War, they inspected Fort McKinley, one of the new harbor defenses of the port. On the return of the party to Peak's Island a grand ball closed the session. The next meeting will be held at Bangor, June 30 to July 2, 1914.

Bath. A. Hallet & Co. have recently equipped a tasteful pharmacy at this place. The fixtures are from the firm of C. H. Bangs & Co. of Boston, Mass.

Portland. The Kosmos Supply Co. has been incorporated by M. A. Thurston and H. P. Sweetzer for the purpose of dealing in chemical supplies.

NEW HAMPSHIRE.

The New Hampshire Pharmaceutical Association held its fortieth annual meeting at the Hotel Wentworth, Newcastle, on June 26 and 27. The first day's session opened with an address by the President, A. J. Precourt, of Manchester, which was listened to with close attention by all the members. Various reports of the executive officers were received showing the Association to be in a flourishing condition as to finance and membership. During the first session the ladies attending the convention were taken on an automobile ride about the city of Portsmouth to the various points of Revolutionary interest and other show places. The second day of the meeting was given up to an excursion to the Isle of Shoals, the party leaving Portsmouth at eleven o'clock in the morning. Dinner was served at the Affedore House on the arrival of the party and the day was spent in rambling about the island. The party returned to the city about six o'clock and a banquet was served during the evening at which Mayor Badger was the principal guest. A cabaret entertainment also served to enliven the dinner. The officers elected for the ensuing year were Eugene W. Emerson, of Milton Mills, President; H. R. Boire, B. P. Porter, Vice Presidents; Chas. G. Dunnington, Secretary; S. Howard Bell, Treasurer, and J. H. Marshall, Auditor; H. E. Rice, E. C. Tilton, C. G. Dunnington, Executive Committee.

The New Hampshire State Board of Health in its last annual report gives considerable attention to analyses of the many proprietary preparations which are sold in that state, and publishes the true cost and selling-price of these articles. Much good might

result if the druggists of the state should present to their customers this report as, if the people would decline to buy such nostrums, the way might be clear to sell them something of the druggist's own preparation which would be of benefit to both druggist and patient.

Concord. George H. Richardson, a well-known druggist of this city, died at his summer home at Bow, N. H., on June 25, of typhoid fever. Mr. Richardson was a native of Concord, having been born here in 1867. In his early manhood he lived for a time in Boston, where his father was engaged in business. He was for many years engaged in the drug business on South Main street. His widow and one daughter survive him to mourn his loss.

Manchester Walsh and Cummings are occupying temporary quarters pending the refitting of the former location at the corner of Amherst and Elm streets. The store is to be made nearly twice as large as before, and when finished will be one of the finest stores in northern New England.

VERMONT.

The twentieth annual meeting of the Vermont Pharmaceutical Association was held at Brandon Inn, Brandon, Vt., on the 24th and 25th of June last. About sixty members were present with their wives. The Association was welcomed to the town by Dr. O. C. Baker, one of the local physicians, and the response was made by President Collins Blakely. The President's annual address spoke of the benefits of organization and of the advantages which have accrued to the trade from organized effort in the legislative field. He also treated of the evils which infest the profession,—chain-stores, price-cutting, etc. Reports of the standing committees and of various officers showed a healthy condition of the Association and its activities in behalf of the trade. Dr. C. W. Peck, of Brandon, delivered an interesting address calling for a higher standard of efficiency for druggists, which address was received with applause. The principal address of the meeting was given by Professor C. F. Nixon, of Leominster, Mass., who took for his subject, "Added Profits for Druggists." He urged his listeners to a use of Propaganda methods in their business and to keep themselves and their help busy in making their own preparations. "Busy men,"

he said, "meant more money." He criticised several of the N. F. formulas and suggested changes in their method of preparation. He related many details of his own store experience, by means of which he had greatly increased his own profits and urged his auditors to go and do likewise. Prof. E. H. LaPierre contributed a paper on Re-Percolation. The matter of a National Home for Druggists was referred to a special committee. The Association voted to affiliate with the N. A. R. D. The officers elected for the ensuing year are: President, A. B. Anderson, of Swanton; Vice-Presidents, Fred R. Parker, O. H. Skinner, and F. C. Spooner; Secretary and Treasurer, W. E. Terrill; Trustees, W. L. Root, Fred D. Pollard, N. C. Dodge. The Traveling Men's Auxiliary of the Association entertained the members with a reception and dance on Wednesday evening and an excursion to Lake Dunmore on Thursday, at which a fish dinner was served. The Traveling Men's Auxiliary elected the following officers: President, E. P. Hyde, of Salisbury; Vice President, C. C. Maynard; Secretary and Treasurer, W. L. Wood; Executive Committee, George J. Shanley, C. G. Maynard and C. F. Rockwood. Press, G. J. Shanley.

Burlington. The Rosenberg pharmacy, on the corner of Church and College streets, was broken into on Sunday night, June 14, and about seventy dollars was taken from the cash register and the safe. The clerk of the store is reported missing and steps have been taken for his apprehension.

Randolph. H. A. Leonard's store was burglarized on Saturday night and a small amount of goods was taken.

MASSACHUSETTS.

The New Ocean House in Swampscott, Mass., was the Mecca for the druggists of the Bay State during the week of June 23, that being the place of meeting of the Massachusetts State Pharmaceutical Association for its thirty-second annual gathering. President William S. Briry, of Melrose, called the convention to order on Tuesday morning and the Chairman of the Board of Selectmen, Mr. James F. Caton, welcomed the Association to the town. About three hundred members were in attendance at the meeting. Mr. Thomas H. Potts, the Secretary of the N. A. R. D., was the special guest of the Association and made eloquent

and forceful addresses to the Association at one of its meetings and at the banquet on Wednesday evening. The reports of the executive officers showed the Association to be in a most flourishing condition, both as to finances and membership. About sixty percent of the druggists of the state are members of the Association. Resolutions of regret and sympathy were adopted on the deaths of J. Arthur Bean and Thomas B. Nichols, the veteran Treasurer of the Association. The Legislative Committee made its report through Messrs. Finneran and Hubbard and this report showed that a tireless and watchful effort had been made by the committee in the interest of the profession with most successful results, in no case were the recommendations of the committee disapproved by the Legislature. Mr. Frank F. Ernst made an interesting address on Propaganda Work by druggists, which address was received with applause. Mr. Marshall called the attention of druggists to the necessity of dating the labels of preparations liable to change, such as Syrup Hydriodic Acid, in order to prevent mistakes or misrepresentation regarding their permanency. The Association was addressed by President Packard of the Massachusetts College of Pharmacy and by Dean Bradley upon the work of that college. Mr. Heinritz ably presented the work of the American Druggists' Fire Insurance Co.; Mr. F. L. Carter spoke as a delegate of the N. W. D. A., and Mrs. J. F. Waterhouse spoke for the W. O. N. A. R. D. Communications conveying congratulations were read from President W. B. Day and Secretary James H. Beal of the A. Ph. A., the latter referring particularly to the representation of the Association in the House of Delegates of the A. Ph. A., and from the German Apothecaries' Association, with plans and itinerary of their proposed European tour. Papers were read by Leon A. Thompson on "The Clerk as a Commercial Asset," by Leopold Bartel on "The Little Family Drug Store," by Prof. LaPierre on "Syrup Placendus." Papers were also presented from Dr. Frank Piper on "Two Important Factors in Pharmacy," from R. Albro Newton on "Reading Between the Lines," from Herman T. Hawthorne on "Stock and Its Classification," and from William T. Bell on "Featuring Confectionery in Drug Stores." Prof. Bradley made a report for the Committee on Adulteration. On Wed-

nesday evening the annual banquet of the Association was given, one of the pleasantest features of which was the presentation to Messrs. Finneran, Hubbard and Nixon of magnificent silver loving cups of exquisite design in recognition of their service to the trade upon behalf of the Legislative Committee. The presentation speech was made by President Frank F. Ernst, who, in most fitting words, told of the gratitude of the pharmacists to these gentlemen and of their desire to show their appreciation of the work they had done in legislative matters for the trade. Messrs. Nixon, Hubbard and Finneran responded to the address of President Ernst in words which evinced how deeply they were touched by this testimonial to them, while each disclaimed that their service entitled them to such a generous recognition of their efforts. The cups are of solid silver, lined with gold, about eighteen inches high, wrought in the highest art of the silversmith. They stand on a base of ebony and are inscribed with the names of the recipients and of the donor. The other speakers at the banquet were Thomas H. Potts, Mrs. John G. Godding, who spoke for the Women's Section of the A. Ph. A., Mrs. Waterhouse and Mrs. Cooper, who responded for the W. O. N. A. R. D., President Frank J. Campbell, President F. L. Carter and C. H. Packard, who responded for the M. C. P. At Thursday's meeting Mr. James F. Finneran was endorsed for election to the Executive Committee of the N. A. R. D. Professor Nixon suggested a New England meeting for 1911, and the matter was referred to the Executive Committee. Mr. Finneran called attention to the plan proposed by Secretary Beal of bringing the state associations into closer affiliation with the national organizations, and it was voted that the Executive Committee take this matter into serious consideration. Mr. J. A. S. Woodrow made an address on "Store Development and Salesmanship," which presented several new ideas to the members. On motion of Mr. Finneran it was voted to appoint three representatives to the House of Delegates of the A. Ph. A. The other features were the entertainment of the T. M. A. on Tuesday evening, a most successful affair, the games and sports in which members and their ladies contested for supremacy, and the ball and fireworks which concluded the meeting, all of which were

under the efficient direction of Mr. C. Herbert Packard, the Chairman of the Committee on Entertainment. The officers elected for the ensuing year were: President, Frank A. Campbell, of Lowell; Vice Presidents, John T. Harper, William Hardie, T. J. Fitzpatrick; Secretary, James F. Guerin; Treasurer, James F. Finneran. William S. Briry, John J. Tobin and James J. Brown were nominated for the State Board of Pharmacy, Charles F. Nixon, E. T. Leonard and Peter J. McCormick were nominated for the State Board of Health, and Fred A. Hubbard, of Newton was nominated to the State Board of Trade. William F. Sawyer, Edward A. Mole and J. W. Cooper were elected as Trustees of the Permanent Fund. Delegates to House of Delegates, C. F. Nixon, John G. Godding, Ernest C. Marshall.

Boston. E. Avery Brewer of the firm of Brewer & Company of Worcester, has purchased an interest in the firm of Carter, Carter & Meigs of Boston. Mr. Brewer says that there will be no radical changes in the conduct of the business by the union of the firms.

Emery M. Willard of the G. S. Cheney Co. died at the Emerson Hospital on Friday, July 12. His funeral took place on Sunday, July 14, from his home in Roslindale.

Holyoke. Frederick J. Heinritz, the oldest son of L. G. Heinritz, has returned home after his graduation as B. S. cum laude from Amherst College. He was one of those selected to compete at the Commencement exercises for the Bond prize of \$100. Another son of Mr. Heinritz (Stuart F.) has just finished his Sophomore year at the same college. It was because of the graduation of his son that Mr. Heinritz was obliged to cut short his attendance on the meeting of the M. S. P. A.

Lawrence. Arthur F. Ryder is building a new block on the corner of Essex street and Broadway in which he will fit up a most up-to-date pharmacy when the building is finished.

Acting upon the opinion of the City Solicitor, the Licensing Board has suspended the liquor license of George Haley at 689 Essex street for sixty days, the term to end August 29, 1913, because of the conviction of his clerk for the illegal sale of liquor on the licensed premises.

Lynn. Arthur Smith is to open a drug-store on Union street in the near future.

Hamilton. George W. Fitz, the Chairman of the Board of Selectmen, has been ordered by the Supreme Court to sign the druggists' licenses which had been voted to be issued by the two other members of the board. Mr. Fitz had previously declined to sign these licenses, but on being instructed by the court in the law said that he would obey it and sign the two licenses granted.

Marshfield. E. L. Pinkham, of Medford, has opened a store in Feinberg's block. This is the first drug-store opened in the town since its incorporation.

North Adams. George M. Chase, one of the proprietors of Apothecary Hall, has been appointed a member of the town Board of Health.

Pittsfield. David P. Sullivan was thrown from his automobile on the 18th ult. He was severely bruised and shaken up.

Reading. Clarence Okley, while freezing ice cream in his store on July 6, was struck by a bolt of lightning which demolished the freezer and rendered Mr. Okley and his assistant, Mr. Barrett, unconscious for a short time. They were not seriously injured.

Salem. Joseph A. Fitzgerald died at his home on Forrester street Saturday afternoon, June 22. He leaves a widow and one son.

Springfield. Charles V. Ryan is fitting up a new store on Main street. He expects to have occupancy about September 15.

The police of this city are making a crusade upon the traveling vendors of dope material. Within the last two weeks they have made two arrests of such persons. They were fined for the offense, but it would almost seem that a term in prison is the only punishment for a person who aids in the moral deterioration of others.

Webster. The druggists of this town were "on the grill" before the Selectmen on the 20th ult. The Chairman of the Board, Mr. George Brunell, informed the druggists that the Board had been informed that unless it controlled the sales of liquor by the druggists, that out-of-town officers would be brought in to secure evidence and make complaint. He did not believe the law had been violated, but he urged the druggists to a strict compliance with the law to avoid any possible trouble by people from other places.

Worcester. Lucius M. Green, an old-time druggist of this city, died at Bayonne, N. J., at the age of 73, on July 6. His body was

brought to Worcester and laid by the side of his wife in Rural Cemetery.

RHODE ISLAND.

The Rhode Island Pharmaceutical Association held its annual meeting and outing at the Warwick Club on Wednesday, July 9. About one hundred of the members attended the outing. President Edward Colton presided over the business session at which twenty-one new members were added to the membership of the Association, and a resolution approving the Myer-Bush bill was passed.

After a program of field sports had been run-off, the party sat down to a true Rhode Island clam-bake, one of the most pleasing features of which was the offering of a toast by President Colton to "Our Southern Pharmaceutical Friends, the Virginia Pharmaceutical Association." When the toast was called for the audience rose and drank the toast standing, while the band played "Dixie."

The officers of the Rhode Island Association are: President, Edward Colton; Vice President, Harry L. Swindell; Secretary, Clarence Bowmer; Treasurer, George T. Armstrong. The committee in charge of the outing consisted of Earl E. Mason, Chairman, Byron Smith, Jr., and Earl Swindell.

Cumberland. The police commissioners have made new rules regarding the stocking of liquors in drug-stores, the most important of which is that no kind of bottled beer or ale shall be kept in drug-stores.

CONNECTICUT.

The thirty-seventh annual meeting of the Connecticut Pharmaceutical Association was held on June 11-12 at the Hotel Pembroke, Woodmont. The attendance was the largest in the history of the organization. Reports of the officers and legislative committee were received, the latter reviewing the legislation referring to druggists which was recently

passed. The officers elected for the coming year are: President, S. M. Aller; Vice Presidents, H. F. Purdy, I. H. Levy; Secretary and Treasurer, P. J. Garwin.

East Killing. The American Druggists-Syndicate has purchased the International Cotton Company's plant for the manufacture of absorbent cotton at this place and will increase the capacity of the plant to 3,000 or 4,000 pounds a day. New machinery is to be installed at once and other articles of similar nature are to be manufactured. The business will be carried on under the old name, the only apparent change being the placing of two representatives of the A. D. S. on the Board of Directors of the cotton plant.

New Britain. W. N. Schweitzer, for twenty years a clerk in Main street stores, has opened a pharmacy on his own account at 355 Arch street.

New Haven. G. E. Judd is to open a drug store at east New Haven, filling a want long felt in this district.

New London. William Sayle, a druggist of twenty-five years' standing in this town, died on July 3. Mr. Sayle left a property assayed at about \$30,000.

Plainville. P. J. Prior has been confirmed by the U. S. Senate as postmaster of this city, and will soon assume the duties of that position. He proposes to continue his drug business also in addition to his official duties.

Waterbury. Six druggists of this city have had their licenses as druggists indefinitely suspended by the State Pharmacy Commission, because of the conviction of these druggists by the courts on charges of violating the excise laws. This penalty was in addition to penalties ranging from \$50 to \$300 imposed upon the defendants. The state police are said to be very active in securing evidence against druggists of this section for the sales of morphine, cocaine, etc.

Report on the Progress of Pharmacy

For the Year 1912

(Fourteenth Installment.)

ANTIPYRINE DERIVATIVES.

Mannich and Krösche call attention to the fact that the already observed precipitate occurring when antipyrine solution is mixed with formaldehyde and ammonia (or with hexamethylene-amine) is a distinct combination of the three substances having the formula $C_{20}H_{20}O_2N_7$. The same substance is obtained when antipyrine, formaldehyde and ammonium chloride are mixed, but when antipyrine, formaldehyde and hydrochloric acid are combined there is produced methylene bis-antipyrine, $C_{22}H_{22}O_2N_4$ which also results along with formaldehyde and ammonium chloride when the hexamethylene-antipyrine body $C_{20}H_{20}O_2N_7$ is heated with hydrochloric acid.

This decomposition reaction suggests that the new base is either a derivative of the bis-antipyrine body or that the hydrolysis first produces antipyrine and formaldehyde and that these two substances then react to produce the bis-antipyrine body and that the latter is true is shown by the fact that the bis-antipyrine body does not form if the hydrolysis is accomplished in the presence of something—example, sulphurous oxide—which will combine with the formaldehyde the moment it is liberated.

The hexamethylene-antipyrine body is shown to be tris-antipyril-tris-methylene-amine $(C_{10}H_{10}N_2O-CH_2)_3N$ and similar condensation products can be made, as shown below, from antipyrine derivatives and analogues. The combinations, because of their slight solubility, are of but slight therapeutic value and by reason of possible formation of these bases under influence of the hydrochloric acid of the gastric juice, antipyrine and hexamethylene-amine should not be prescribed together.

The following bodies were prepared during the investigation:

1. *Tris - antipyril - tris - methylene - amine.* Small crystals, M. P. 259-260°.

2. *Hydrochlorate of same.* White crystalline powder, M. P. 178°.

3. *Methylene-bis-antipyrine.* $C_{22}H_{22}O_2N_4$, melting (when dried) at 179°.

4. *Bi-hydrochlorate of same.* Small crystals, M. P. 120-125°; when free from water, a crystalline powder, M. P. 200-220°.

5. *Monohydrochlorate of same.* Large soft crystals, M. P. 94-95°; when free from water, M. P. 100-110°.

6. *Tris - tolypyryl - tris - methylene - amine,* $(C_{12}H_{12}N_2O-CH_2)_3N$. Small crystals, M. P. 214-215°.

7. *Hydrochlorate of same.* Short white crystals, M. P. 100-105° when air dried; 191° when completely dried over sulphuric acid.

8. *Methylene-bis-tolopyrine,* $C_{26}H_{26}O_2N_4$, obtained along with formaldehyde and ammonium chloride, when "7" is hydrolysed with 5% HCl. Fine white matted crystals (M. P. 190° when completely dry), which were also prepared by action of formaldehyde on tolypyrine.

9. *Tris - homo - antipyrine - tris-methylene-amine.* $(C_{12}H_{12}N_2O-CH_2)_3N$, obtained by treating homo-antipyrine with hexamethylene tetramine in the presence of hydrochloric acid and then making mixture alkaline. Small white shining crystals melting at 280°.

10. *Hydrochlorate of same.* Fine hygroscopic crystals, melting at 202°.

11. *Methylene-bis-homo-antipyrine.* $C_{22}H_{22}O_2N_4$, obtained along with formaldehyde and ammonium chloride when "9" is hydrolysed with 5% HCl. Combines with one molecule of water, forming small crystals, melting at 120-130°, and when completely dry it melts at 105-106°.

12. *Bi-hydrochlorate of same.* White loose crystal masses, M. P. 200-210°.

COMPOSITION OF TANNIN.

K. Feist reports his study of tannin obtained from Turkish and from Chinese nut-

galls. He reviews his prior work of obtaining from commercial tannin a pure crystalline body, which he called gluco-gallic acid, and he now discusses its preparation from Turkish galls (by extraction in Soxhlet's apparatus first with chloroform, then with benzene to remove fat, wax and other impurities, and then removal of the pure body by extraction with absolute ether) and the physical properties of the glucogallic acid, including optical rotation $[\alpha]_D^{25} = +10.6^\circ$. He finds that glucogallic acid has the molecular weight 318.2 (calculated by titration with N/10 alkali) or 315 (by increase of boiling point); that one molecule of it hydrolyses to one molecule of gallic acid and one molecule of glucose; that it contains water of crystallization and that its formula is either $C_{15}H_{10}O_{16}H_2O$ or $C_{15}H_{14}O_{16} \cdot 2H_2O$. It is not hydrolysed by action of emulsin; it contains no aldehyde group, but does contain a phenol group.

The latter part of the paper deals with tannin from Turkish nutgalls. This tannin, purified by the chloroform-benzene-ether method described above, hydrolysed with normal sulphuric acid, yielded gallic acid and dextrose, but not much of the latter (as much as 20%) was decomposed during hydrolysis; hence the proportion of the two products of hydrolysis could not be determined. The optical rotation of tannin is $-\alpha]_D^{25} + 28.6^\circ$ to $+31.8^\circ$; molecular weight estimations are reported and a comparison of the methyl compounds of the two tannins—Chinese and Turkish—is presented.—Arch. d. Pharm., 250 (1912), No. 9, 668. (H. V. A.)

ALKALOIDS OF PAREIRA BRAVA.

M. Scholtze publishes a critique of a paper on this topic by Faltis (Monatsheft f. Chem., 33—1912—873), correcting by past experiments and some just carried out several of Faltis' conclusions; notably that the latter's iso-bebeerine is not $C_{27}H_{23}NO_6$, but is $C_{27}H_{19}NO_6$.—Arch. d. Pharm., 250 (1912), 684. H. V. A.

DEXTROGYRATE LUPANINE.

A. Beckel reports further work on this alkaloid as conducted by Professor Ernst Schmidt and his pupils. The paper gives table of yield of alkaloid by different methods of extraction from Lupin seed, followed by physical data relating to d-Lupanine $C_{15}H_{21}N_2O$ (M. P. 200°) and to oxy-lupanine

$C_{17}H_{23}N_2O_2$ (M. P. $205-206^\circ$), both of which were obtained from the crude alkaloid. Oxidation of the d-lupanine with chromic acid mixture, with hydrogen dioxide, both 3% and 30%, and alkaline potassium permanganate was tried. The yield of oxidized product in the first two cases was too small for satisfactory examination, but the permanganate product gave a gold salt (M. P. $188-189^\circ$) and a platinum salt ($C_{17}H_{23}N_2O_2 \cdot HCl)_2 \cdot PtCl_6 \cdot 2H_2O$. With bromine either in aqueous, alcoholic or acetic acid solution, lupanin forms an orange-red precipitate. This does not mean (as previous investigators have reported) a splitting of the lupanine, but the product consists of a mixture of the dihydrobromides of lupanine, of oxy-lupanine, and of ethoxy-lupanine. These, Beckel has been able to separate by fractional crystallization.

Ethoxy-lupanine dehydrobromide $C_{17}H_{23}N_2O \cdot O \cdot C_2H_5 \cdot 2HBr$ melts between 228 and 236° and has optical index $n_D^{20} = 1.29.4^\circ$.

Ethorylupanine hydriodide prepared from the hydrobromide with hydriodic acid as needles melting at $221-222^\circ$.

Ethoxy-lupanine-di-sulphocyanate, $C_{17}H_{23}N_2O \cdot C_2H_5 \cdot 2HSCN$, by treating the hydrobromide with ammonium sulphocyanate colorless needles, M. P. $172-174^\circ$.

Ethoxy lupanin gold chloride, M. P. $145-150^\circ$, a crystalline combination of 2 molecules of the ethoxy-lupanine hydrochlorate with one and two molecules of $AuCl_3$ respectively.

A reduction product, prepared by treating the hydrobromate with hydriodic acid. This was a base whose iodo-methylate has same formula as the iodo-methylate of d-lupanine, $C_{15}H_{21}N_2O \cdot CHI_2$, and resembles it in all respects save in its gold and platinum salts.

The article closes with description of the other dehydrobromides mentioned above.—Arch. d. Pharm., 250 (1912), 691. (H. V. A.)

GUNPOWDER IN MEDICINE.

F. Berger presents an interesting historical paper showing use of gunpowder in medieval and folk medicine.—Schweiz. Wschr. f. Chem u. Pharm. L (1912), No. 49, 729. (H. V. A.)

WATER AND HYDROGEN DIOXIDE AS ACIDS.

Dr. J. Sperber presents his views on this subject, which includes the idea that metallic

hydroxides are primary salts (e. g. NaHO), while the metallic oxides are secondary salts (e. g. Na_2O). He calls such "salts" *aquates*, while corresponding metallic peroxides, he calls *hyperaquates*. This, according to his reasoning, eliminates bases from chemical nomenclature and he also seems to be of the opinion that the word "acid" will also disappear by considering all acids as salts of the "metal" hydrogen. The question of alkalinity and acidity he disposes of by calling attention to the fact that some normal salts (e. g. Na_2CO_3) are distinctly alkaline and that alkalinity and acidity are, therefore, functions of the individual ions rather than characteristics of two classes of compounds. He promises experimental work that will prove his contention.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 50.—(H. V. A.)

FOCKE'S ASSAY OF DIGITALIS.

Dr. James Burmann publishes a short article strongly criticising all physiological digitalis assays with the frog, and particularly the method recommended by Focke.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 51, 757.—(H. V. A.)

LITHIUM.

F. Berger gives an interesting outline of the history of this metal and its supposed therapeutic action. The paper is accompanied by an excellent bibliography.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 40, 597. (H. V. A.)

CANTHARIDAL COLLODION.

In the last revision of the Swiss Pharmacopoeia the recipe for cantharidal collodion was so changed that instead of dissolving in flexible collodion an ethereal extract of cantharides, the preparation was "improved" by "dissolving" cantharidin in flexible collodion in proportion of 1 to 250. "E. B." calls attention to the fact that cantharidin will not dissolve in that proportion its solubility in ether being 1 to 650 and in ether-alcohol mixture (similar to collodion) 1 to 460. He further proves his point by carefully preparing the cantharidal collodion as per directions of the present Swiss Pharmacopoeia when he found considerable of the cantharidin remained undissolved. He therefore suggests a recipe consisting of catharidin 0.2 gm., castor oil 5 gm., acetone 7 gm., larch turpentine 8 gm. and collodion 80 gm.—

Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 45, 673. (H. V. A.)

SWISS TINCTURES AND FLUIDEXTRACTS.

Dr. Th. Knapp publishes a table showing the specific gravity and percentage of extractive (dried at 100°) of each of the tinctures and fluidextracts of the Swiss Pharmacopoeia as prepared in his own pharmacy.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 45, 676. (H. V. A.)

CULTIVATION OF MEDICINAL PLANTS.

Dr. Kurt Siegfried gave a lecture on this topic before the Swiss Apotheker Verein, outlining work done on this line in other countries, amount of drugs imported that might well be raised in Switzerland, and closing with some suggestions as to drug raising in general.—Schweiz. Wschr. f. Chem. u. Pharm. L. (1912), No. 46 and 47, 689 and 70. (H. V. A.)

VOLUMETRIC ESTIMATION OF IODIDES.

The assay process of Rupp and Schirmer for estimation of ferrous iodide by use of ferric chloride as oxidizing agent, suggested to W. Schirmer similar assays for the alkaline iodides. Potassium iodide can be assayed by dissolving 0.4 gm. KI in 20 cc. water, adding 5 gm. solution ferric chloride (of German Pharmacopoeia), letting stand an hour, then diluting with 100 cc. water, then adding 10 cc. 25% phosphoric acid, followed by 0.5 gm. KI (to dissolve separated iodine) and finally titrating with tenth-normal thiosulphate. Iodine can also be liberated from the iodide with sodium nitrite if precautions are taken to remove the excess of N_2O_3 produced by the reaction. Urea accomplishes this aim, the proper proportion being KI 0.5 gm., urea 1 gm. and nitrite 0.1 gm. Potassium iodate serves a similar purpose provided borax is added to neutralize excess of iodic acid. Details of this assay are given in the original paper.—Arch. d. Pharm., 250 (1912), No. 6, 448. (H. V. A.)

STARCH GRANULES AND A "ZÄHLKAMMER."

Hartwich and Wichmann describe the difficulty in securing by microscopic means accurate results when estimating the amount of an adulterant in a powder mixture. To secure the needed accuracy they have devised a microscopic ruled slide that is a modification of the blood count slide. Their slide has etched upon it 100 squares, each of 1.5

square millimeters area. The squares are enclosed in a chamber, the walls of which are strips of cover glass 0.25 mm. thick. Into this chamber the powder (or usually its dilution with pure sugar, 1 to 100 or 1 to 1000) is placed, carefully weighed, and then a definite quantity of water (3 to 4 drops) is added and a cover glass placed over the chamber and the powder examined. On addition of the water, the sugar dissolves, leaving the powder, sometimes in very minute quantities, distributed over the slide, and a counting of the characteristic plant elements in three or four of the 1.5 square millimeter spaces usually furnishes a safe average.

A typical report is one on the percentage of clove stalks in a sample of powdered cloves. The stalks contain characteristic stone cells and from their number, the percentage of adulteration was deducted by the following reasoning: 0.01 gm. of a 1% triturate of clove stalks (0.0001 gm. of the stalks themselves) was put into the slide and on counting in three different experiments, 173, 166 and 156 stone cells were found. That is, there was an average of 165 stone cells to each 0.0001 gm. clove stalks or one stone cell to each 0.00000061 gm. clove stalk powder. Taking as "unknown" a sample of powdered cloves, that had been admixed with clove stalks, the observer calculated by count of the stone cells that the powder contained 15.65 percent stalks. In truth, 15 percent had been added.

The adulteration of saffron with sandal wood could likewise be proven by the wood particles, but this was more difficult, since the wood cells are not of uniform size. The average, however, was one wood cell to 0.000000028 gm. of powdered sandal wood.

Discussing starch granules, it is shown that the moisture of the different starches varies from 11.68 percent in wheat starch to 15.53 percent in canna starch.

From count of the several air-dried starches, was deducted the following weight of their granules:

Rice starch.....	0.00000000018 gm.
Corn starch.....	0.00000000082 gm.
Arrowroot starch....	0.0000000073 gm.
Wheat starch.....	0.00000000069 gm.
Canna starch.....	0.000000036 gm.
Potato starch.....	0.000000076 gm.

The rest of the paper is given to discussing the relationship of size and weight of

the granules and the verification of data so obtained by calculation of the density of the granules. The writers confirm Flukiger's statement of the marked difference in density if the granules are air-dried or dried at 100°, and also the interesting fact that while air-dried potato starch is lighter than arrowroot starch, when both are dried at 100° the potato starch is much heavier.—Arch. d. Pharm., 250 (1912), No. 6, 152. (H. V. A.)

Two New and Very Delicate Tests by use of the Reagent "Tetramethyl Base."—This is a modification of Trillat's test for traces of lead and manganese, as suggested by R. J. Carney, by means of the organic base, tetramethyl diamino diphenylmethane, $(\text{C}_6\text{H}_5)_2\text{N}_2(\text{C}_6\text{H}_4)_2$, later named "tetra methyl base" by Arnold and Mentzel to distinguish it from p-phenylenediamine, which had long been known as "tetra base."

The base is prepared as follows: A mixture of 30 gms. dimethylanilin, 10 gms. of formaldehyde, 200 cc. of water and 10 cc. sulphuric acid, is heated for one hour on a water bath, cooled, made alkaline with an excess of sodium hydroxide and the excess of dimethylanilin removed by steam distillation. Cool the contents of the retort, filter, wash well with water, and recrystallize once from alcohol.

Carney recommends the use of citric acid in place of acetic as originally used by Trillat, as being more stable towards light and does not form a precipitate on heating.

The reagent is made up by dissolving 2.5 gms. of the "tetra methyl base" in a solution of 10 gms. of citric acid in 10 cc. of water, afterwards diluting to 500 cc.

With any compound of lead or manganese in which the metal has a valence of more than two, a cold solution of the reagent will give a deep reddish purple color, due to an oxidation product of the reagent.

The reagent is proposed as a very delicate test for gold and ammonia, whereby 0.01 mg. gold in 50 cc. of solution may be detected, and from 0.01-0.02 mg. NH_3 in the same amount of liquid.

With very dilute solutions of gold chloride, this reagent forms a very beautiful purple color, which soon changes to blue and then becomes colorless, the blue color reappearing upon warming. Platinum, paladium or other elements, do not interfere, but free mineral acids must be neutralized, then made acid with acetic or citric acid.

Ammonia may be detected with great accuracy by distilling from an alkaline solution and holding a piece of filter paper, moistened with a solution of 2 gms. of manganous sulphate and 5 cc. of hydrogen peroxide solution in 200 cc. of water, in the current of steam as it issues from the tube. Ammonia, if present, forms a brown spot, which turns purple when moistened with the organic reagent.—*Journal American Chemical Soc.*, Jan., 1912, p. 32, v. 34. (L. A. B.)

The Leaf Oil of the Washington Cedar (Thuja plicata).—According to R. E. Rose and Carl Livingston, the leaves and twigs of *Thuja plicata* yield about 1 percent of a clear, light yellow oil, with the characteristic odor of cedar boughs. The following constants were found: sp. gr. 20° C.=0.913; refractive index 20° C.=1.4552; sp. rotation 20° C.=−4.77°; acid number=0.518; ester number=2.28; saponification number=2.8; acetylation number=8.8.

An elementary analysis showed the absence of sulphur and nitrogen, and to contain C=78.6 percent; H=10.4 percent; which agrees very closely with that of a bicyclic ketone, C₁₀H₁₆O. The oil contained no phenols and was soluble in all proportions of anhydrous organic solvents and in 70% alcohol.

From the analytical results submitted, the authors conclude that the volatile oil of *thuja plicata* is composed of 80 to 85 percent thujone, 3.5 percent pinene, 1.2 percent tanacetyl acetate, 1.3 percent tanacetyl alcohol, leaving about 10 percent to be accounted for by loss due to formation of resin during distillation and experimental losses.—*Journ. Am. Chem. Soc.*, Feb., 1912, v. 34, page 201. (L. A. B.)

The Reduction of Vanadic Acid in Concentrated Sulphuric Acid by Hydrogen Peroxide and Persulphates.—According to J. R. Cain and J. C. Hostetter, pentavalent vanadium can be immediately and quantitatively reduced to the quadrivalent condition by means of hydrogen peroxide or the peroxide of zinc, barium, magnesium or sodium in the presence of concentrated sulphuric acid. Molybdenum, titanium or iron do not interfere.

It was also found that concentrated sulphuric acid solutions of vanadium pentoxide could be reduced with persulphates.

The process is carried out by evaporating a solution of vanadium with concentrated

sulphuric acid until fumes are given off freely, cool, add a slight excess of 3% H₂O₂, cover the flask and fume strongly for a few minutes more to destroy the excess of peroxide, after which the solution may be titrated against permanganate.—*Jour. Am. Chem. Soc.*, March, 1912, vol. 34, page 274. (L. A. B.)

Syrupus Ferri Iodidi.—O. J. Cloughly, St. Louis, suggests the following as an improved process for syrup of iodid of iron:

Iron Wire (bright and cut in small pieces).....	12.5 gm.
Iodine	41.5 gm.
Citric Acid.....	4 gm.
Sugar	600 gm.
Distilled Water, q. s.	
Solution Potassium Hydroxid....	50 cc.

Place the iron wire in the solution potass. hydroxid in a proper container; shake it well for about ten minutes, decant and wash the iron thoroughly with distilled water; decant and repeat the operation until the iron is entirely free from the slightest trace of the hydroxid, then proceed with the directions of the U. S. P., replacing the dilute hypophosphorous acid with four grams of citric acid.

The cleansing of the iron wire with the hydroxid solution leaves the iron free from oxid or any other substance that might cause the finished product to turn dark. The hypophosphorous acid forms iron hypophosphate, which easily turns dark; the citric acid forms the citrate of iron, which gives the finished product the required green color.—*Proc. Missouri Phar. Assoc.*, 1912, pp. 133, 134. (E. C. M.)

Elixir Ferri, Quininae et Strychninae Phosphatum.—O. J. Cloughly, of St. Louis, suggests the use of sodium hydroxide in the Elixir of Phosphates of Iron, Quinine and Strychnine and the elimination of the acetic acid and carbonate of ammonia. He proposes the following formula:

Soluble Ferric Phosphate...	17.500 gm.
Quinine	8.750 gm.
Strychnine .....	.275 gm.
Phosphoric Acid.....	2 cc.
Solution sodium hydroxid..	q.s.
Distilled water,	
Aromatic Elixir, of each....	q.s.

Dissolve the quinine and the strychnine in the alcohol, then add the phosphoric acid

and 350 cc. of aromatic elixir. Dissolve the ferric phosphate in 30 cc. of distilled water by the aid of a gentle heat and add the solution of sodium hydroxid to almost neutralize the solution (be careful not to get it too strong or it will throw out the alkalis), and add enough aromatic elixir to make the product measure 120 cc. Finally mix the two solutions and filter. Add enough simple elixir to make 1000 cc.—*Proc. Missouri Phar. Assoc.*, 1912, p. 133. (E. C. M.)

Tinct. Opii Deodorati.—William K. Ilhardt, of St. Louis, discusses the preparation of deodorized tincture of opium from deodorized opium and suggests the following process for preparing the same:

Deodorized granular opium,
(12-12½%) 100 gm.
Alcohol 200 cc.
Water, q. s. 1000 cc.

Heat 500 cc. of water to boiling, pour it on the granulated opium contained in a suitable vessel, stirring occasionally during 24 hours. Then transfer the mixture to a percolator, return the first portion of the percolate until it runs through clear, and continue the percolation until the opium is exhausted. Reserve the first 650 cc. of percolate, add to this the alcohol, and evaporate the remainder on a water bath until it measures 100 cc. Allow it to cool and mix with the reserved portion; filter this mixture, rinse the dish with water and pour on the filter, using sufficient to make 1000 cc. of tincture.

The alcohol is added to the reserved portion to preserve it, since it is not evaporated as in the official process.

One advantage of the proposed *technique* is that the bulk of the extract and the alkalis are not subjected to prolonged heat.—*Proc. Missouri Phar. Assoc.*, 1912, pp. 112-3. (E. C. M.)

Tinct. Opii Deodorati.—O. J. Cloughly, of St. Louis, suggests the use of paraffin in making deodorized tincture of opium, to replace the benzin of the official process:

Granulated opium..... 100 gm.
Paraffin q. s.
Alcohol 200 cc.
Water q. s.

Heat 500 cc. of water to boiling and pour it on the granulated opium contained in a

suitable vessel, stirring the mixture frequently during twenty-four hours. Then transfer the mixture to a percolator, return the first percolate until it runs through clear and when the liquid ceases to drop, continue the percolation with water until the opium is exhausted; concentrate the percolation by evaporation over a water bath until it measures 150 cc. Take about 60 grams of paraffin and melt to a liquid and add to the opium while it is still hot and beat the two together for about five minutes, then set aside to cool. When cool, break a small hole through the paraffin, which will rise to the top, and drain off the opium, which will be completely deodorized. Mix the deodorized liquor so obtained with 600 cc. of water, filter and add the alcohol; wash the filter with sufficient water to make 1000 cc.—*Proc. Missouri Phar. Assoc.*, 1912, p. 132. (E. C. M.)

Alcoholic Assay by evaporation method.—Mr. Claude Mason, state chemist of Idaho, reviews the different methods of alcoholic assay and recommends the following method as one of easy application by pharmacists in determining the alcoholic content of their preparations. The specific gravity of the sample is determined. Then 50 to 100 cc. is carefully evaporated to about one-fourth of its original volume. This is returned to the measuring flask and distilled water is added sufficient to make it of its original volume. The specific gravity of this is then taken. Add one to the specific gravity of the original sample and subtract the specific gravity of the de-alcoholized product from this and the difference corresponds to the specific gravity of the alcoholic sample. The percent of alcohol is then found by referring to the specific gravity tables of the Dispensatory, all taken at 60° F. or 15.6° C.—*Proc. Idaho Phar. Assoc.*, 1912, pp. 22, 23. (E. C. M.)

Coal Tar Products and the Drug Trade.—Charles B. Kelsey, of Grand Rapids (?), says that coal tar is one of the three residuals of most importance in the manufacture of coal gas, about twelve gallons of this product being obtained from every ton of coal carbonized. The utilization of coal tar products as applied to the manufacture of dyes and medicinal preparations, is monopolized by the German laboratories on account of the great difference in wages received by the chemists of that country compared with those of America. Only two of the so-called

coal tar products handled by druggists occur naturally in coal tar—Naphthaline and the various grades of Carbolic Acid. Naphthaline is mostly known to druggists as Moth Balls, Moth Flakes, etc. The druggists of the United States handle about 5,000,000 pounds a year of this substance as moth preventives. Its effectiveness for this purpose depends upon the distaste which the flying moth has for its odor.

The other natural derivative handled by druggists is Carbolic Acid, under the names of Phenol U. S. P. and Cresol U. S. P. Both of these are known as Carbolic Acid, one termed crystallized, and the other carbolic acid for disinfecting purposes. The latter is not always U. S. P. Cresol, as a less highly refined grade is as satisfactory for this purpose.—Proc. Idaho Phar. Assoc., 1912, pp. 10-12. (E. C. M.)

Coal Tar Products and their Manufacture.—George McDermand, the chemist of the tar department, Denver Gas and Electric Light Co., furnishes an interesting paper on coal tar products, giving their methods of manufacture, uses, etc., avoiding the use of technical terms as far as possible, so as to make it intelligible to the average pharmacist.—Proc. Idaho Phar. Assoc., 1912, pp. 36-40. (E. C. M.)

Biologics, their specificity.—Mr. W. F. Richter, of Berkeley, Cal., contributes an interesting paper on this subject in which he says: "In some diseases, such as diphtheria and tetanus, the causative organisms remain at the point of introduction into the body. The diphtheria bacillus remains localized in the 'patch.' During their growth they elaborate very potent toxins or poisons which are carried to the various tissues of the body upon which each exerts its particular action, producing a symptom complex characteristic of the disease. It is probable that in these cases the body not only forms substances antagonistic to the existence of the bacteria, but also substances that have a neutralizing effect upon the toxin. By isolating these toxins and injecting them into animals, large amounts of these toxin neutralizing bodies (anti-toxins) are produced. Here again these substances show a true specificity in that the serum of animals immunized against diphtheria toxin will neutralize only

diphtheria toxin and not tetanus toxin. Likewise, tetanus antitoxin will only neutralize tetanus toxin."

The lower animals are immune to syphilis, typhoid fever and other diseases which affect mankind, and fowls are able to withstand many times the quantity of tetanus toxin that would kill a horse. Yellow fever rarely occurs in the negro race. Such insusceptibility is termed inherited immunity. In contradistinction to this form is acquired immunity (which may be either natural or artificial.) He describes the methods of acquiring the latter immunity, both active and passive, describes vaccines and serums and calls particular attention to the fact that failure in many cases to cure, may be due to lack of proper selection of the bacterial vaccine or serum.—Proc. Idaho Phar. Assoc., 1912, pp. 29-34. (E. C. M.)

Spiritus Ammoniae Aromaticus.—Dr. Linwood A. Brown concludes from a study of the storage of this preparation extending from March to June, 1911, that it should be kept in glass or rubber-stoppered bottles, at a temperature not exceeding 15° C. or 60° F. and not at so low a temperature that the ammonia salt shall be deposited.—Proc. Kentucky Phar. Assoc., 1912, pp. 136-139. (E. C. M.)

Liquor Sodae Chlorinatae.—Mr. E. F. Kelly, of Roland Park, Md., after a study of this preparation and a comparison of the method for its manufacture with that of the method for Liquor Potassae Chlorinatae N. F., says that the latter process is the better one for the manufacture of the soda preparation, with the necessary change of ingredients, etc., and with the correction that the final quantity should be 1000 grams.—Proc. Md. Phar. Assoc., 1912, pp. 132-134. (E. C. M.)

Pharmacopoeial Plants of Maryland, etc.—Prof. Charles C. Plitt, of the University of Maryland, makes an analysis of the sources of the articles included in the Pharmacopoeia and finds that 638 of them are of botanical origin and urges pharmacists to take more interest in that side of their profession, declaring that they will be more than repaid in the pleasure derived from the study.—Proc. Md. Phar. Assoc., 1912, pp. 94-98. (E. C. M.)

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

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A GOOD START.

The faculty of the Buffalo College of Pharmacy have nominated to membership in the A. Ph. A. four of the "Honor Men" of the graduating class of 1913. The names of the young gentlemen who are thus distinguished are:

Stratton Walley Bower, 46 Chedell Place, Auburn, N. Y.

Evel Polonsky, 1061 Broadway, Buffalo, N. Y.

Richard J. Ulrich, 402 Cedar Ave., Niagara Falls, N. Y.

Glenn M. Zoller, Alexandria Bay, N. Y.

These young gentlemen are to be congratulated upon their success. They have graduated from an institution of high grade, and are now nominated for membership in an Association that is mentioned with respect wherever the language of pharmacy is spoken. They have a good start.



PROGRAM OF THE SCIENTIFIC SECTION.

Frank R. Eldred, Chairman.

John M. Francis, First Vice Chairman.

Wilbur L. Scoville, Second Vice Chairman.

Freeman P. Stroup, Secretary.

Meetings will be called to order promptly at 2:30 p. m. on Tuesday, Wednesday and Thursday.

1. Chairman's Address. The Deterioration of Pharmaceutical Preparations.

2. Charles E. Caspari. The Determination of Sanatonin in Santonica.

3. Hermann Engellhardt and O. E. Winters. The Estimation of Phosphorous in Tablets, Pills, etc.

4. Charles H. Lawall. A New Form of Separatory Funnel for Preventing the Formation of Emulsions in Shaking Out with Immiscible Solvents.

5. Charles H. LaWall and Leroy Forman. Methods of Estimating Oil of Peppermint in Spirit of Peppermint.

6. Charles H. LaWall and Leroy Forman. Methods of Examination of Extract of Vanilla.

7. E. A. Ruddiman. The Examination of Proprietary Medicines.

8. Linwood A. Brown. Some New Methods for the Analysis of Certain Drug Preparations.

9. W. D. McAbee. The Phosphoric An-

hydride Content of Syrup of Hypophosphites.

10. H. T. Graber. Observations upon the Assay of Pepsin.

11. Azor Thurston. Linseed Oil.

12. H. W. Jones. Some Notes on the Lall Wall Assay Process.

13. H. A. B. Dunning. Detection and Estimation of Minute Quantities of Methyl Alcohol in the Presence of Ethyl Alcohol and Formaldehyde in the Presence of Hexamethylenetetramine.

14. Francis D. Dodge. Notes on the Analysis of Essential Oils.

15. Edward Kremers and Nellie Wakeman. An Examination of the Volatile Oil of *Monarda Citriodora*.

16. Edward Kremers and C. W. Talbot. The Crystalline Glucoside from *Gaultheria Procumbens*.

17. H. M. Gordin and Jay Kaplan. Note on the Comparative Adsorption of Different Substances by Lloyd's Reagent, Animal Charcoal and Aluminum Hydroxide. Complete Adsorption of Alkaloids.

18. L. E. Sayre. Oregon Balsam.

19. L. E. Sayre. Gelseminine—Further Report of Progress in the Purification of this Alkaloid.

20. Frank Rabak. The Effect of Geographical Source on the Volatile Oil of Hops.

21. A. F. Sievers. Individual Variation in Belladonna Plants as a Basis for Improvement by Selection.

22. F. A. Miller. The Influence of Soil Composition on Medicinal Plants.

23. F. A. Miller and W. F. Baker. The Comparative Activity of Various Species and Varieties of Digitalis.

24. F. A. Miller. The Commercial Possibilities in Growing Medicinal Plants.

25. W. W. Stockberger. The Field for Drug-Plant Breeding.

26. W. W. Stockberger. *Cunila mariana*, a Substitute for *Spigelia*.

27. Henry Kraemer. Reactions of Plant Substances with Certain Reagents.

28. Wm. Mansfield. Plant Hairs of the U. S. P. and N. F. Drugs.

29. Wm. Mansfield. Papain of Commerce.

30. Heber W. Youngken. The Relation of Pharmacognosy to the Practice of Pharmacy.

31. E. N. Gathercoal. The Pharmacognosy Museum.

32. John Uri Lloyd and J. T. Lloyd. Coca:

Its History and Uses by the Indians of the Colombian Andes.

33. Otto Raubenheimer. Bethabara.

34. Charles E. Vanderkleed and Fritz Heidelberg. Metal Colloids, Their Increasing Importance as Remedial Agents.

35. Fritz Heidelberg, Paul S. Pittenger and Charles E. Vanderkleed. A Pharmacodynamic Study of the Pituitary Gland, with Tests of a New Product.

36. Paul S. Pittenger and Charles E. Vanderkleed. A New Uterus-Contracting Method of Testing Ergot, with Comparison with the Blood Pressure Method.

37. Charles E. Vanderkleed and Paul S. Pittenger. Variation in Susceptibility of the Guinea Pig, Continuation of a Previous Study.

38. C. C. Haskell. Deterioration of Digitalis Tinctures and Fluid Extracts.

39. C. C. Haskell. The Relative Activity of Various Galenical Preparations of Ergot.

40. C. C. Haskell and W. A. Doeppers. The Rate of Deterioration of Ouabain Solutions.

41. C. C. Haskell and F. A. Miller. The Influence of Curing and Storage upon the Activity of Digitalis Leaf.

42. Paul S. Pittenger. An Improved Form of Kymograph.

43. E. G. Eberhardt and Frank R. Eldred. Bibliography of the Deterioration of Drugs and Pharmaceutical Products.

44. Jacob Diner. Autogenous Vaccines.

45. Severance Burrage. Biological Products; Their Use and Abuse.

46. Wilbur L. Scoville. Tincture of Cantharides.

47. George D. Beal. The Preparation of Pure Dextrose and Sucrose Caramels.

48. B. L. Murray. Acidity of Hydrogen Dioxide Solution.

49. E. E. Wyckoff. Hypophosphorous Acid.

50. L. F. Kebler. Are Tablets of Uniform Composition?

51. C. H. Briggs. How Much Should Compressed Tablets Vary in Weight?

52. Bernard Fantus. The Making of Tablets by the Retail Pharmacists.

53. M. I. Wilbert. The Proposed List of Useful Remedies.

54. C. S. Woods. Consideration of Some Newer Remedies.

55. F. E. Stewart. Suggestions Regarding

the Work of the Scientific Section of the A. Ph. A.

56. Albert Schneider. Some Chinese and Japanese Pills, Tablets and Powders Imported into the United States.



PROGRAM OF THE SECTION ON PRACTICAL PHARMACY AND DISPENSING.

1. "The Most Difficult Things to Learn in Dispensing"—By H. P. Hynson, Baltimore, Md.

2. "Syrup of Lactucarium"—By L. E. Sayre, Lawrence, Kans.

3. "Practical Hints of a Dispenser"—Franklin M. Apple, Philadelphia.

4. "Lotio Alba Demonstrated with Samples"—By Otto Raubenheimer, Brooklyn, N. Y.

5. "Shape and Color of Tablets for External Use"—By Otto Raubenheimer, Brooklyn, N. Y.

6. "A New and Satisfactory Formula for Liquor Antisepticus, U. S. P."—By Charles H. LaWall, Philadelphia.

7. "A New and Satisfactory Formula for Liquor Antisepticus Alkalinus"—By Charles H. LaWall, Philadelphia.

8. "Some Practical Microscopical and Bacteriological Work for the Pharmacist"—By Albert Schneider, San Francisco.

9. "The Value of Vegetable Drugs to Pharmacists and Physicians."—By William Mansfield, New York, N. Y.

10. "Mistura Glycyrrhizae Composita"—By Henry Utech, Meadville, Pa.

11. "Do Physicians Understand the Fundamentals of Prescription Writing?"—By R. H. Needham, Fort Worth, Texas.

12. "Notes on the Decomposition of Neo-Salvarsan"—By Fred E. Niece, New York, N. Y.

13. "Some Additional Sources of Error in the Chemical Examination of Urine"—By J. L. Mayer, New York.

14. "Factors and Facts in the Practice of Pharmacy"—By Wm. J. Lowry, Jr., Baltimore, Md.

15. "Camphorated Oil in Ampoules," Simple Apparatus for Filling (with Demonstrations)—By J. Leon Lascoff, New York.

16. "Liquid Shampoos and Toilet Soaps, with Formulas"—By Ernest F. Jones, Detroit, Mich.

17. "A Good Finish for Prescription and

Laboratory Table Tops"—By F. W. Nitardy, Denver, Colo.

18. "Suspension of Calomel"—By F. W. Nitardy, Colo.

19. "The Liniments of the U. S. P. and N. F." "A Few Suggestions"—By Thomas Latham, New York.

20. "Practical Pharmacy and System in the Prescription Department"—By H. G. Posey, New Orleans, La.

21. "A Prescription and a Query"—By J. W. Bender, Philadelphia.

22. "Counter Prescribing"—By Bernard Sacks, New York.

23. "Liquor Magnesii Citratis"—By J. Lee Brown, Marshfield, Oregon.

24. "The Necessary Apparatus in a Reputable Prescription Pharmacy"—By Jeannot Hostman, New York.

Other titles of papers will be published later.

Fraternally,

J. LEON LASCOFF.



SUPPLEMENTAL REPORT OF TRANSPORTATION COM- MITTEE.

In connection with the meeting of the American Pharmaceutical Association at Nashville, Tenn., next August, the Transportation Committee recommends to the members that they use the following service:

SCHEDULE.

Leave New York, Penna. R. R. 9:30 pm

Leave Philadelphia, Penna. R. R. . . . 12:15 am

Leave Baltimore, Penna. R. R. 2:50 am

Arrive Washington, Penna. R. R. . . . 3:55 pm

Leave Washington, Southern Ry. 4:10 am

Leave Bristol, Southern Ry. 2:40 pm

Arrive Chattanooga, Southern Ry. . . 10:00 pm

Arrive Nashville, N. C. & St. L. . . . 2:55 am

Passengers may occupy the car at Nashville until 7 am.

Leave Nashville, N. C. & St. L. 9:30 pm

Leave Chattanooga, Southern Ry. . . . 5:20 am

Arrive Bristol, Southern Ry. 1:32 pm

Arrive Washington, Southern Ry. . . . 12:15 am

Arrive Baltimore, Penna. R. R. 1:38 am

Arrive Philadelphia, Penna. R. R. . . . 4:25 am

Arrive New York, Penna. R. R. 7:13 am

Passengers joining from Baltimore may go to Washington in the evening and take space in local car put on train at Washington which is open for occupancy at 10 p. m. night.

before departure, passengers from Washington, of course, can also be accommodated in the same car. Passengers using the local sleeping car from Washington will change to the Nashville car while en route some time during the day.

This train is composed of highest class, modern, steel, electric lighted sleeping cars; dining cars; also an observation car between Washington and Chattanooga, Tenn.

The one-way rate from New York to Washington is \$5.65; the 10-Day Excursion rate is \$10. From Washington, the Southern Railway will announce the rate of \$30.25, Washington to Nashville, Tenn., and return, tickets being sold from there August 16 and 17, limited to reach Washington returning by midnight of September 1, 1913. It is suggested by the Transportation Committee that arrangements be made for party to leave on Saturday, August 16th, which will place them in Nashville Monday morning. The lower berth rate from New York to Nashville is \$5.50; upper berth, \$4.40.

It is thought that some of the members may desire to stopover in Chattanooga on return trip which may be arranged for one day, only, in order to visit Lookout Mountain, Chickamauga Park, Missionary Ridge, etc.

If any members desire to go on the Old Dominion Line from New York to Norfolk, thence rail, that may be arranged, such parties leaving here Friday. The round trip rate from Norfolk will be \$30.15. The round trip rate to Norfolk is \$14, good for 30 days.

Send all applications for reservations of sleeping car space and railroad transportation to Mr. Alex. S. Thweatt, Eastern Passenger Agent, Southern Railway, 264 Fifth Ave., New York City, who will have the matter in hand.

DR. WM. C. ALPERS,

Member, Transportation Committee.

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THE ST. LOUIS A. PH. A. DELEGATION TO NASHVILLE.

The St. Louis party will leave on the Dixie Flyer Sunday, August 17, at 8:30 p. m., reaching Nashville Monday at 8:35 a. m. The convention rate for the round trip is \$14.30. Sleeper fare is \$2 each way. Tickets are on sale, August 16 and 17, good to return as late as September 1.

Some of the delegates will leave on the

Dixie Flyer Saturday night, arriving at Nashville Sunday morning. Parties desiring to join the St. Louis delegation should inform the St. Louis member of the Committee on Transportation, Dr. H. M. Whelpley, 2342 Albion Place.

<>

THE NATIONAL ASSOCIATION AT CINCINNATI.

The N. A. R. D. Convention will take place in the week of August 25th. Extensive preparations are under way, to make this Convention the most notable in the history of the N. A. R. D.

For the stranger who has never had an opportunity to visit Cincinnati, or whose visit has not been within the last years, a trip to the Convention City will be worth while. Some things which Cincinnati offers cannot be offered by any other city in the country. Particularly the suburbs and the surrounding hills of Cincinnati, the beautiful scenery along the Ohio River, and the many public institutions, will be an attraction. Many of the entertainment features will take place at the Cincinnati Zoological Garden, which is one of the beauty spots of the country, at the same time being possibly the best equipped Zoo.

Aside from the work of the Convention proper, the entertainment features which have been arranged for, will fully compensate the expense of the trip. The entertainment will include a dinner, tendered by the Ohio Valley Druggists' Association, to the entire Convention, including delegates, their ladies and visitors. This dinner will be given at the Club House and surrounding grounds of the Cincinnati Zoological Garden. Arrangements are being made to dine fifteen hundred, and it will be the first time in the history of the Cincinnati Zoo that so many guests have been entertained at one time. A really unique entertainment for a Convention week has been arranged by The American Druggists' Fire Insurance Company, in the form of a theatrical performance, which will be rendered exclusively for the Convention. Under the direction of the Schuster Dramatic School, one of the noteworthy institutions of that kind in the country, the cast including some of the best known professionals, there will be given a special performance of Shakespeare's "Twelfth Night." The performance will be

given in the open, on a stage specially constructed under the magnificent large trees of the Cincinnati Zoological Garden. Particular attention is being given to the smaller details, so as to give the performance as nearly in keeping with the time of the Shakespearean period as it will be possible to give it. It is safe to say, that never in the history of Pharmaceutical Conventions has so elaborate an entertainment been contemplated. An opportunity will also be had to enjoy the beautiful scenery along the Ohio River. The Wm. S. Merrell Chemical Company has chartered the largest steamer floating on the Ohio River for that purpose. Aside from a trip up and down the river, its arrangements include an old-fashioned Kentucky barbecue at Coney Island, one of the summer resorts near the city. Those who have not had an opportunity to take part in this old-fashioned Kentucky hospitality, certainly have a treat in store through the generosity of the Wm. S. Merrell Chemical Company. The Womans' Organization of Cincinnati is making special effort for the entertainment of the visiting ladies, and their program will include many special features which will keep the ladies busy during their stay in the Convention City.

Cincinnati is determined to make the N. A. R. D. Convention a success. It will be worth the time and money for every retail druggist to plan both a business and pleasure trip for himself and family, to include the N. A. R. D. Convention at Cincinnati, during the last week of August. A time of the year when the climate in that section of the country is ideal. For those who have never had the opportunity, it will also be a splendid occasion to make a side trip to the world-renowned Mammoth Caves.

E. H. THIESING.

Council Business

COUNCIL LETTER No. 16.

PHILADELPHIA, July 1, 1913.

To the Members of the Council:

Motions No. 28 (Appropriation of \$2200 for Volume 59 of the Proceedings), and No. 29 (Appropriation of \$50 for Section on Commercial Interests) have each received a majority of affirmative votes.

The following communication has been received from C. Lewis Diehl, Chairman of the Committee on National Formulary:

"The revision of the N. F. has been so far advanced that a final review and, if necessary, correction of the proposed text has become necessary, in order to make it possible to submit the same to the Association for approval at the annual meeting in August. This will necessitate their publication to the committee through the *Bulletins* of the Committee, which have heretofore been so efficiently issued by Mr. Wilbert. Unfortunately, owing to his severe illness and the consequent prohibition by his medical advisors to engage in any work for several months, makes his valuable services no longer available, and we have therefore been forced to make arrangements for the rapid continuance of this work by an expert stenographer, so that there may be no avoidable delay. Prof. E. Fullerton Cook has succeeded in securing a competent stenographer in Philadelphia, who is specially qualified to prepare the stencils and to deliver them to him in their corrected form for mimeographing for a reasonable sum. Professor Cook himself agreeing to make and distribute the mimeograph copies, so that the *Bulletins* will rapidly follow each other, weekly or oftener.

"Mr. Wilbert, as you know, did this work for the Association without compensation, only rendering from time to time his bill of expenses for stationery and other material, and postage. The work of preparing the stencils will now have to be paid for, and there are other expenses which should be paid promptly at the end of each month. It is, moreover, desirable that these payments should not, as heretofore, go through the circuitous process of financing at present in vogue, if this can be avoided. In other words, an appropriation should be available which will permit the payment of these bills by the treasurer if they have been approved by the Chairman of the Committee on N. F., and by the General Secretary.

"The authority for publishing these *Bulletins* was given by the adoption of the report of the Committee on the N. F. at Richmond, recommending this publication (see *Proceedings* 1910, 524), which also carried with it an appropriation "not exceeding \$1000.00 for carrying on experimental work." It is immaterial now, whether, as probably intended, this appropriation also included the preparation and circulation of the *Bulletin*. Suffice it to say that only a comparatively small proportion of this appropriation has been expended for actual experimental work, and that even if the amount paid out for the publication of the *Bulletin* up to the present be included, there is still a sum available from this appropriation to probably pay for the increased number and expense of *Bulletins* now required.

"I confess, I do not understand the intricacies of our financial methods in vogue.

but whatever happens, it is clear to my mind that it will be necessary to provide for a final discussion and approval by the Committee of the proposed text for the revised N. F. before it can be submitted to the Association for approval.

"May I ask you to submit this letter to the Council for such action as may be necessary to carry on this important work?"

It is in order to state that the 1910-1911 appropriation of \$1000 referred to by Professor Diehl expired with the end of that fiscal year.

In 1911-12, \$1000 was appropriated for "National Formulary-General Account," with "Reappropriation of balance in National Formulary Experiment Fund." (*A. Ph. A. Bulletin*, 1911, 322).

In 1912 the Budget contained an item for "Reappropriation of balance in National Formulary Experimental Fund" of \$728.62, and one for "National Formulary general expenses" of \$1000, but under Motion No. 21 (Council Letter No. 9, January 2, 1912), these appropriations were made one lump sum of \$1728.62, instead of two separate items, as in the proposed Budget. (*Journal A. Ph. A.*, 1912, 82, 186).

In 1913, in the Budget (Item No. 5), the appropriation for the National Formulary was made \$1000 (Council Letter No. 6; *Journ. A. Ph. A.*, 1913), and against this appropriation, the Chairman of the Committee on Finance states, only a small amount has been drawn.

The appropriation for 1913 includes both the "general expenses," and the "experimental expenses," as in 1912.

The bills of the Association are paid in accordance with the "Rules of Finance," as adopted by the Association. General Secretary Beal is of the opinion that the plan followed is cumbersome and not in accord with modern business methods. Every bill, approved by the proper authorities, must be audited by the Finance Committee, before an order can be drawn on the treasury; then the check, in addition to the Secretary's signature, must be signed by the President, Chairman of the Council and the Treasurer. Naturally, such a method means much delay in the payment of bills, and it would seem to be in order to devise a simpler and more flexible system of bill-paying, and yet one that would properly safeguard the interests of the Association.

Prof. Diehl suggests that the bills for

National Formulary work shall not, as heretofore, go through the circumlocutory process of financing at present in vogue, if this can be avoided, but that the bills shall be payable by the Treasurer, if they have been approved by the Committee on N. F. and by the General Secretary. Such a procedure would require a suspension and modification of the "Rules of Finance."

Would it not be better to consider the whole subject of the business and financial methods of the Association at the Nashville (1913) meeting with the thought of framing a system that would meet modern needs and requirements? This could be done directly at the Nashville meeting, or better probably through a report from the Committee on Finance to the Council as the basis of discussion.

Motion No. 30 (Election of Members). You are requested to vote on the following applications for membership:

No. 202. Geo. H. Gould, 106 E. Main St., Louisville, Ky., rec. by H. M. Whelpley and J. W. England.

No. 203. Robert Emmett Stallings, 130 State Capitol, Atlanta, Ga., rec. by J. H. Beal and J. W. England.

No. 204. Clofton O. Prince, Winchester, Tenn., rec. by J. O. Burge and Iliff Conger.

No. 205. Walter J. Vitous, 1627 Railway Ave., N. W., Puyallup, Wash., rec. by Charles W. Johnson and L. S. Gilbertson.

No. 206. Lumir G. Vitous, Puyallup, Wash., rec. by Charles W. Johnson and L. S. Gilbertson.

No. 207. William Edward Danhauer, 404 Frederica St., Owenboro, Ky., rec. by H. M. Whelpley and J. W. Mackelden.

No. 208. F. H. Hudelson, Weatherford, Okla., rec. by Foress B. Lillie and H. M. Whelpley.

No. 209. Walter E. Fender, Sgt. Hospit. Corps, U. S. A., Post Hospital, Fort Porter, Buffalo, N. Y., rec. by Wm. B. Day and A. H. Clark.

No. 210. Robert Arthur Warren, Clarks-ville, Ark., rec. by Francis George Schach-leiter and H. M. Whelpley.

No. 211. Elmer H. Hessler, 145 N. 10th St., Philadelphia, Pa., rec. by E. Fullerton Cook and Ambrose Hunsberger.

No. 212. Samuel Young Althoff, Owl Drug Co., Dallas, Texas, rec. by E. G. Eberle and J. P. Remington.

No. 213. John Irwin Hoffman, Coal Dale, Pa., rec. by G. H. Meeker and J. W. Sturmer.

No. 214. Hyman W. Ostrum, 108 W. Girard Ave., Philadelphia, Pa., rec. by J. W. Sturmer and G. H. Meeker.

No. 215. Joseph Wilson Beck, Winfield, Texas, rec. by E. G. Eberle and C. A. Duncan.

No. 216. Thompson A. Nooner, 173 E. 2d St., Fond du Lac, Wis., rec. by Thos. J. Shannon and J. O. Burge.

No. 217. Joseph Caruso, 182 Graham Ave., Brooklyn, N. Y., rec. by William C. Anderson and Frederic P. Tuthill.

No. 218. Israel Schwartz, 503 East 7th St., Brooklyn, N. Y., rec. by William C. Anderson and Henry W. Schimpf.

No. 219. Jack Edwin Justice, 214 Franklin St., Clarksville, Tenn., rec. by William R. White and F. L. Smith.

No. 220. John Raymond Ayers, Jr., 101 Chestnut St., Everett, Mass., rec. by Elie H. LaPierre and C. Herbert Packard.

No. 221. Richard C. Webster, 26 North Main St., Canton, Ill., rec. by W. B. Day and A. H. Clark.

No. 222. George W. Simmons, Utica, Miss., rec. by H. M. Foser and W. B. Day.

No. 223. C. E. Anding, Leakesville, Miss., rec. by H. M. Foser and W. B. Day.

No. 224. Joe C. Rousseau, Sergeant Hospital Corps, U. S. Army, Aviation Squadron, Signal Corps, San Diego, Cal., rec. by Dr. George F. Payne and Herman W. Riess.

No. 225. Heatherly Maynard, Sgt. 1st Class, Hospital Corps, 2d Division, U. S. Army, Texas City, Texas, rec. by Dr. George F. Payne and H. W. Riess.

No. 226. Adolph H. Lienhart, Ambulance Company No. 4, Ft. William McKinley, Rixal, P. I., rec. by Wm. B. Day and Edgar T. Hitch.

No. 227. John Roy Gilliland, 59th and Water Sts., Pittsburgh, Pa., rec. by J. H. Beal and J. W. England.

No. 228. Mrs. Mabel Lyon, 1430 College St., Bowling Green, Kentucky, rec. by E. Berger and J. H. Beal.

No. 229. Mrs. St. Claire Ransford Gay, 2787 Broadway, New York, N. Y., rec. by J. Roemer and Hugh Craig.

No. 230. William Penn Bishop, Crockett, Texas, rec. by E. G. Eberle and C. A. Duncan.

No. 231. George Jacob Echols, 308 West

Main St., Richmond, Va., rec. by M. E. Hutton and Ira B. Clark.

No. 232. R. W. Waldrop, Lynnville, Tenn., rec. by J. O. Burge and Ira B. Clark.

No. 233. Samuel Marcus, Sgt. 1st Class, Hospital Corps, U. S. A., Fort Mills, Corregidor, Philippine Islands, rec. by Frederick R. Williams and Edgar T. Hitch.

No. 234. Charles William Jacob, 7405 Madison St., Forest Park, Ill., rec. by Chas. H. Avery and W. B. Day.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d St.



COUNCIL LETTER No. 17

PHILADELPHIA, July 9, 1913.

To the Members of the Council:

The following motions have been received:

Motion No. 31 (Additional Appropriation for Proceedings, Vol. 59). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$1000, or so much thereof as may be necessary, be appropriated for Proceedings and Report on the Progress of Pharmacy in addition to that appropriated through Motion No. 28. This appropriation has been approved by the Committee on Finance.

Motion No. 32 (Additional Appropriation for Drug Trade Conference). Moved by J. H. Beal, seconded by J. A. Koch, that the sum of \$125, or so much thereof as may be necessary, be appropriated to cover the expense of delegates in attendance upon the Drug Trade Conference, in addition to that appropriated by Motions Nos. 14 and 22. This appropriation has been approved by the Committee on Finance.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d St.



COUNCIL LETTER No. 18.

PHILADELPHIA, July 24, 1913.

To the Members of the Council:

Motions No. 30 (Election of Members; Applications Nos. 202 to 234, inclusive), No. 31 (Additional Appropriation for Proceedings, Vol. 59) and No. 32 (Additional Appropriation for Drug Trade Conference) have each received a majority of affirmative votes.

Motion No. 33 (Election of Members.)

You are requested to vote on the following applications for membership:

No. 235. Perry Newton Black, 5165 Penn Ave., Pittsburgh, Pa., rec. by John C. Wallace and J. A. Koch.

No. 236. William Edward Burckart, 734 Court St., New Castle, Pa., rec. by Louis Saalbach and J. A. Koch.

No. 237. Luther E. Carruth, Kentwood, La., rec. by F. C. Godbold and Philip Asher.

No. 238. Henry Earl Byram, Decatur, Neb., rec. by Karl L. Kreizinger and A. V. Pease.

No. 239. Frederick George Kaester, Brunswick, Neb., rec. by E. W. Bexter and A. V. Pease.

No. 240. Clarence Shelp Lincoln, Ceresco, Neb., rec. by Karl L. Kreizinger and A. V. Pease.

No. 241. Orbia Wilber Cass, Crofton, Neb., rec. by J. Earle Harper and A. V. Pease.

No. 242. Harry Hemping, Tekamah, Neb., rec. by D. J. Fink and A. V. Pease.

No. 243. Irving McEwen, 511 S. 35th St., Omaha, Neb., rec. by E. J. Christian and A. V. Pease.

No. 244. Chas. Herbert Skinner, Main and State Sts., Windsor, Vt., rec. by Elie H. LaPierre and W. E. Terrill.

No. 245. F. E. D. Farmer, 2 Merchants Row, Rutland Vt., rec. by Elie H. LaPierre and L. J. Trudel.

No. 246. Miss Columbus A. Shipe, Annona, Tex., rec. by R. H. Walker and E. G. Eberle.

No. 247. Sam A. Williams, Elm St., Troy, Ala., rec. by W. P. Thompson and L. C. Lewis.

No. 248. Edna Winnifred Roach, Lyman, Wash., rec. by J. H. Beal and C. W. Johnson.

No. 249. Abel Robert Todd, Drug Analyst, Dairy and Food Dept., Lansing, Mich., rec. by F. L. Shannon and A. B. Stevens.

No. 250. C. H. Sethness, 718 Curtis St., Chicago, Ill., rec. by J. H. Beal and J. W. England.

No. 251. Raymond Schultheis, Cuartel de Espana Manila, P. I., rec. by W. B. Day and A. H. Clark.

No. 252. W. L. Lipscomb, Dyersburg, Tenn., rec. by Ira B. Clark and J. O. Burge.

No. 253. Albert H. Koch, 2401 N. Jefferson Ave., St. Louis, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 254. George Wilton Brown, 918 Third

Ave., Evansville, Ind., rec. by George W. Rohm and H. M. Whelpley.

No. 255. Edwin G. Cox, Craig, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 256. C. Lieber Jewel, Sergeant, Hospital Corps, U. S. A., 1301 Euclid Ave., Massillon, Ohio, rec. by Dr. George F. Payne and H. W. Riess.

No. 257. Henry Schmitman, Regt. Hospital, 4th Field Artillery, Texas City, Tex., rec. by Geo. F. Payne and H. W. Riess.

No. 258. William J. F. Bade, 2923 Sidney St., St. Louis, Mo., rec. by C. A. Heckelman and H. M. Whelpley.

No. 259. August Siedler, Sergt. 1st Class, Hospital Corps, U. S. A., Ft. Wm. McKinley, P. I., rec. by W. B. Day and A. H. Clark.

No. 260. Robert Alexander Dickson, Sergt. 1st Class, Hospital Corps, U. S. A., Ft. Wm. McKinley, P. I., rec. by W. B. Day and A. H. Clark.

No. 261. Lewis Tanney, Sergt. 1st Class, Hospital Corps, U. S. A., Ft. Wm. McKinley, Rixal, P. I., rec. by W. B. Day and A. H. Clark.

No. 262. Richard J. Ulrich, 402 Cedar Ave., Niagara Falls, N. Y., rec. by Willis G. Gregory and J. H. Beal.

No. 263. Glenn M. Zoller, Thousand Island Pharmacy, Alexandria Bay, New York, rec. by Willis G. Gregory and J. H. Beal.

No. 264. Evel Polansky, Ph. G., University of Buffalo, College of Pharmacy, 1061 Broadway, Buffalo, N. Y., rec. by Willis G. Gregory and J. H. Beal.

No. 265. Stratton Walley Bower, 23 Williams St., Auburn, N. Y., rec. by Willis G. Gregory and J. H. Beal.

No. 266. Howard M. Rhea, Somerville, Tenn., rec. by E. A. Ruddiman and J. T. McGill.

No. 267. Evans H. Webb, 1421 9th Ave., N. Nashville, Tenn., rec. by E. A. Ruddiman and J. T. McGill.

No. 268. Dr. W. W. Stockberger, Bureau of Plant Industry, U. S. Department of Agriculture, Washington, D. C., rec. by R. H. True and L. F. Kebler.

No. 269. Wood Wiles, 104 W. Walnut St., Bloomington, Ind., rec. by W. H. Rudder and C. B. Jordan.

No. 270. George R. Wallace, 426 Fairmount Ave., Philadelphia, Pa., rec. by J. H. Beal and J. W. England.

No. 271. Wm. F. Dedrick, 308 Wall St.,

Kingston, N. Y., rec. by Thos. F. Alain and Charles Holzhauser.

No. 272. Floyd E. Pruden, Qunah, Tex., rec. by R. H. Needham and J. H. Beal.

No. 273. James H. Taylor, Haynesville, La., rec. by Philip Asher and J. H. Beal.

No. 274. William W. Irwin, Cor. 24th and Chapline Sts., Wheeling, W. Va., rec. by Walter E. Dittmeyer and W. C. Price.

No. 275. William Lee Flake, Water Valley, Miss., rec. by E. A. Ruddiman and J. T. McGill.

No. 276. Carl M. Dodson, 418 S. Washington St., Enid, Okla., rec. by E. A. Ruddiman and William R. White.

No. 277. Charles Eugene Heimerzheim, 567 Central Ave., Brooklyn, N. Y., rec. by Louis Berger and Hugo Kantrowitz.

No. 278. Fred S. Rogers, 30 North St., Middletown, N. Y., rec. by Hugh Craig and J. Roemer.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33rd St., Phila., Pa.



SHOP LIFTING EXTRAORDINARY.

Recently one of the sort of customers who are in the habit of annexing portable articles that are not nailed down picked up from the counter of a Brooklyn drug store a package containing diphtheria culture that had just been left by a physician to be forwarded to the Board of Health for examination. The manager immediately hurried a clerk after her, stating that she had stolen a diphtheria culture package from the counter. The young man caught up with her outside, and said, "Madam, will you please return the package which you just now took from the counter?" She immediately became indignant and denied having taken anything which did not belong to her.

"Madam," said the clerk very seriously, "you have taken a package of diphtheria cultures left by a doctor and if you carry them home with you, you are liable to infect and kill every one in your household."

She emitted a horrified screech and at once produced the culture envelope, which was plainly labeled, making the excuse, which was undoubtedly an afterthought, that she thought it was a sample of some kind for free distribution.—*Voice of the Retail Druggist.*

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or *type-written*.



BROWN, W. H.,
From 4200 Irving Park Blvd., Chicago, Ill.,
To 12th and Market Sts., San Diego, Calif.

CHARLES, CORLISS D.,
From 123 South Logan St., Denver, Colo.,
To 120 Logan St., Denver, Colo.

FULLER, O. F.,
From 220 Randolph St., Chicago, Ill.
To 235 West Randolph St., Chicago, Ill.

GILBERT, C. THURSTON,
From 27 Stevens St., Danbury, Conn.,
To 9th and Asbury Ave., Ocean City, N. J.

GILBERTSON, L. STEVEN,
From 4223 12th Ave., N. E., Seattle, Wash.,
To R. F. D. No. 3, Snohomish, Wash.

GUERRERO, J. C.,
From Laredo, Texas,
To Encinal, Texas.

HEADEN, CLAUDE,
From 451 Hayes Ave., San Francisco, Calif.,
To 201 Frederick St., San Francisco, Calif.

HOLZHAUSER, CHARLES,
From 987 Broad St., Newark, N. J.,
To 787 Broad St., Newark, N. J.

HOUGHTON, E. M.,
From 130 Longfellow St., Detroit, Mich.,
To care Parke-Davis & Co., Detroit, Mich.

HECKELMAN, C. A.,
From 3511 Juniata St., St. Louis, Mo.,
To 525 Papan St., Webster Groves (St. Louis Co.), Mo.

HAWKINS, TOM W.,
From Marvin's Pharmacy, Dallas, Texas,
To Main and Akard Sts., Dallas, Texas.

MATHEWS, ELMO D., Sgt. 1st Cl., H. C., U. S. A.,
From Ft. St. Michael, Alaska,
To Fort Greble, R. I.

MILNER, C. E.,
From U. S. Postal Agency, Shanghai,
China,
To Albion, Ind.

REUM, ARTHUR W.,
From 1124 Gough, San Francisco, Calif.,
To 1271 Third Ave., San Francisco, Calif.

REISER, PHILIP,
From 562 Auburn St., Camden, N. J.,
To 588 Carmen St., Camden, N. J.

RASMUSSEN, NELSON, Sgt. 1st Cl., H. C., U.
S. A.,
From Fort Winte, Grand Island, P. I.,
to Ambulance Co. No. 4, Fort McKinley,
P. I.

SAHM, LOUIS N.,
From 22 Cliff St., New York City,
To 505 Hudson St., New York City.

HAERTLEIN, GEORGE H.,
From 830 Walnut St., Milwaukee, Wisc.,
To 830 State St., Milwaukee, Wisc.

FRANKAU, GUST, Sgt. 1st Cl., H. C., U. S.
A., Retired,
From Fort Wm. McKinley, P. I.,
To General Delivery, Manila, P. I.

ALBERTS, M. LEE,
From Kewanee, Wisc.,
To 934 Downer Ave., Milwaukee, Wisc.

HALE, WM. WORTH,
From Isabella Apts., Washington, D. C.,
To The Berkshire, Washington, D. C.

CRYSLAR, RALPH,
From 151 3d St., Portland, Ore.,
To Box 93, Portland, Ore.

LANE, JOHN J.,
From 348 Ogden Ave., Jersey City, N. J.,
To 3d Ave., Highland Park, N. J.

TRACEY, AUGUSTUS, Sgt. 1st Cl., H. C., U.
S. A.,
From 479½ F St., S. W., Washington,
D. C.,
To 475 G St. S. W., Washington, D. C.

CASPARI, CHAS E.,
From 4060 Westminster Ave., St. Louis,
Mo.,
To 2108 Locust, St. Louis, Mo.

BURNSIDE, CARL B.,
From 724 E. Market St., Iowa City, Iowa,
To Davenport, Iowa.

COBB, RALPH L.,
From 112 Superior St., Cleveland, Ohio,
To 2113 Central Viaduct, Cleveland, Ohio.

WILKERSON, J. A.,
From 3007 Rauschenbach Ave., St. Louis,
Mo.,
To 2213 St. Louis, St. Louis, Mo.

WIRTHMAN, J. GEO.,
From 1535 Grand Ave., Kansas City, Mo.,
To 1235 Grand Ave., Kansas City, Mo.

LEWARK, OVID B.,
From 2491 Sheridan Blvd., Denver, Colo.,
To Osgood, Weed Co. Colo.

ABBOTT, DR. WALLACE CALVIN,
From 4605 W. Hermitage Ave., Ravens-
wood, Chicago, Ill.,
To 4753 East Ravenswood Park, Ravens-
wood Sta., Chicago, Ill.

RESIDENCE UNKNOWN.

BARBEE, WM. D.,
From Letterman General Hospital, San
Francisco, Calif.

GOLDSTEIN, JACOB,
From 1231 Madison St., Chicago, Ill.

CLIZER, WM. A.,
From 5023 Wall St., Spokane, Wash.

SMITH, MISS RENNA MAE,
From Fort Worth, Texas.

SUNRISE SONG.

The thing we want
Is hearts that rise above earth's worries like
The sun at morn, rising above the clouds,
Splendid and strong.

I stand at morn
And view the smoke curling above the roofs
In great volume, and thereby I know
The age is one of growing industries.

O man look up, even in the hour of weal.
When progress leads the nation and revere
The grace of God that watches o'er the earth.

When hearts of men
Are cloudless, free from all defiling strain,
The mighty gods, clearly beholding them,
Fill them with pure light.

No need to bear
Grudge against heaven or wreak one's spite-
ful spleen
Against one's fellowmen, when one reflects
On his own errors.

—Emperor Mutsuhito (Japan).

Incorporated: Washington, D. C., 1888.

GENERAL OFFICERS.

OFFICERS-ELECT FOR 1913-1914.

(To be installed at the 61st Annual Convention.)

OFFICERS OF THE COUNCIL FOR 1912-1913.

MEMBERS OF THE COUNCIL FOR 1912-1913.

(Elected by the Association.)

(Elected by Local Branches.)

LEWIS C. HOPP, Northern Ohio Branch, Cleveland, Ohio.....	Term expires 1912
JOHN B. THOMAS, Baltimore Branch, Baltimore.....	Term expires 1912
F. J. WULLING, Northwestern Branch, Minneapolis.....	Term expires 1912
F. J. WHITE, Nashville Branch, Nashville, Tenn.....	Term expires 1912
J. A. KOCH, Pittsburg Branch, Pittsburg, Pa.....	Term expires 1914
PHILIP ASHER, New Orleans Branch, New Orleans, La.....	Term expires 1914
JOHN A. MARTIN, Denver Branch, Denver, Colo.....	Term expires 1914
HENRY B. FLOYD, City of Washington Branch, Washington, D. C.....	Term expires 1914
THOMAS D. McELHENIE, New York Branch, New York, N. Y.....	Term expires 1915
ALBERT H. CLARK, Chicago Branch, Chicago, Ill.....	Term expires 1915
WILLIAM K. ILHAROT, St. Louis Branch, St. Louis, Mo.....	Term expires 1915
FRANKLIN M. APPLE, Philadelphia Branch, Philadelphia, Pa.....	Term expires 1915
E. H. LAPIERRE, New England Branch, Cambridge, Mass.....	Term expires 1916
C. T. P. FENNEL Cincinnati Branch, Cincinnati, Ohio.....	Term expires 1916

(Members of the Council Ex-Officio.)

The President, Vice Presidents, General Secretary, Treasurer, Reporter on the Progress of Pharmacy, Secretary of the Council, Local Secretary, Historian, and the Chairmen of the Sections.

*Report corrections at once to the General Secretary.

COMMITTEES OF THE COUNCIL.

(Elected by the Council.)

COMMITTEE ON UNOFFICIAL STANDARDS.

OTTO RAUBENHEIMER, 1841 Fulton Street, Brooklyn.....	Term expires 1913
GEORGE D. ROSENGARTEN, P. O. Box 1625, Philadelphia.....	Term expires 1913
CHARLES E. VANDERKLEED, 200 First Avenue, Collingswood, N. J.....	Term expires 1918
M. I. WILBERT, 1621 35th St., N. W., Washington, D. C.....	Term expires 1913
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Legislation—IRA B. CLARK.
National Formulary—R. L. EVES.

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 1 year—A. O. ZWICK.

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Committee on Program for Annual Meeting.

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MRS. LOUIS EMANUEL.
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MRS. FLETCHER HOWARD.

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

The Sixty-First Annual Convention

Held at Nashville, Tennessee, August 18-23, 1913

ADDRESS OF PRESIDENT WILLIAM B. DAY.

Precedent has decreed that the President's address shall deal with important matters touching the activities of the Association and influencing its welfare. Fortunately, the facilities afforded through our JOURNAL and the ability of its distinguished editor have greatly lessened or altogether removed the necessity for a lengthy discussion of so great a variety of topics. The editorials and the contributions in the JOURNAL have given the more important of these subjects an extended consideration and have had the great advantage of reaching the entire membership rather than the limited number who are able to attend the annual meeting. I shall therefore present to you only a brief resumé of the endeavors of the association during the past year with a few recommendations intended to point out some of the important matters which await action or decision.

ATTITUDE TOWARD NOSTRUMS.

Custom, long established and widely recognized accepts the pharmacist as the purveyor of medicines to the community. By education and training, he is fitted for this responsible position. Physicians freely admit that it is vain to expect the people to call a doctor for every little ache or pain. That self-medication

has obtained a firm hold in our country cannot be denied. If the druggist refused to supply the popular demand for medicines he would inevitably turn over many of his patrons to charlatans and quacks.

Recognizing these conditions, the question then arises: How far may the druggist go in supplying medicines without trespassing unduly on the rights of the physician and without incurring serious risk of injuring the patient?

Obviously, such medicines as dentifrices, non-poisonous washes and antiseptics might be supplied without scruple. A step further would include liniments, many ointments and other preparations for external use and then simple laxatives and cathartics as well as the so-called domestic remedies.

With some exceptions, especially of those preparations containing dangerous or habit-forming drugs, the standard preparations of the U. S. P. and N. F.



WILLIAM B. DAY, Chicago,
President, 1912-1913.

simply labeled and without exaggerated claims for their virtues might be sold with due caution and judgment.

But what should be our attitude toward the so-called "patent medicines"? These proprietaries are secret in composition and secrecy in formula is frequently accompanied by extravagant therapeutic exploitation.

In some cases, the patient is injured by the formation of drug-habits, in others by the excessive or ill-advised use of powerful drugs, while if no other ill effects are experienced there is often a waste of valuable time devoted to "trying out" a much-vaunted cure, during which the opportunity for successfully combating the disease is lost.

From a purely selfish viewpoint, the druggist is little benefitted by the sale of these proprietaries for they are the favorite excuse for price-cutting and

have done much to demoralize the drug business financially. At best the pharmacist has no opportunity to employ his professional knowledge and skill but merely hands out a package of ready-made medicine of whose composition he knows little or nothing, and perhaps assumes the responsibility for recommending it in the treatment of a disease of whose nature he is equally ignorant. This is exceedingly unfortunate both for the patient and the pharmacist.

At this time we should do no less than emphatically restate our steadfast opposition to nostrums of all descriptions. The American Pharmaceutical Association has constantly opposed quackery and fraud in medicine and should pledge its cordial support to the efforts which the American Medical Association is making to overcome these twin evils.

But whether we are now ready to undertake an investigation of proprietary medicines, I doubt. We are lacking in laboratory facilities and in funds for the carrying on of such work. Our immediate effort should be toward providing a laboratory where these and other investigations might be undertaken.

In this connection it is worthy of note that there has been a world-wide awakening to the dangers of nostrums. Especially in English-speaking countries where heretofore a policy of inactivity has been tolerated, inquiries under government direction have been undertaken and restrictive measures proposed or put into effect. Thus in the Australian commonwealth exaggeration in advertising is prohibited and secrecy of composition is held to be wrong; it is maintained that "any person engaged in the proprietary medicine trade may reasonably be required to manifest in the descriptions and recommendations of a preparation, a knowledge and appreciation of the facts of medical science and practice and that all useful remedies are the product of pharmacologic and related clinical practice."

In Great Britain the effect of the National Insurance Act has been to greatly increase prescription writing with a corresponding decrease in the demand for nostrums.

DISPENSING BY PHYSICIANS.

The increase in the practice of self-dispensing among physicians is deplorable and carries with it an element of risk which the public does not yet appreciate. But there are signs that the tide is turning and that self-dispensing will soon be on the wane. Noteworthy among these signs of a realization on the part of the public of the harmful possibilities of this practice is the new Indiana law which permits the physician to administer but not to dispense, that is leave with the patient, certain narcotic and habit-forming drugs; while in Kansas, physicians' drug-stocks are subject to the same inspection and must conform to the same regulations regarding labeling as are the stocks of pharmacists.

But the strongest endorsement of the pharmacist's claim comes through the regulations governing the application of the National Insurance Act in Great Britain. Under these regulations the status of the physician as the prescriber and the pharmacist as the dispenser is definitely fixed, thus marking an epoch in the history of British pharmacy. In the first annual report of the Commissioners the pharmacists receive a deserved tribute of having been reasonable in negotiation, helpful in administration and satisfactory in actual pharmaceutical service.

While such progress encourages pharmacists to hope for a lessening of the dispensing evil, even the most sanguine do not expect immediate reformation of a practice at once so long established and so widespread.

The superior professional training of the physician affords a prestige which the pharmacist can scarcely hope to attain. It is evident that legislation which would take away from the highly-trained physician a privilege which he now possesses and would confer this privilege exclusively on the pharmacist will not be readily obtained.

An endeavor to force the issue would not only be futile but would provoke the resentment of physicians. Rather must we rely upon the quiet influence of a better education in improving the standing of the pharmacist and in winning over public opinion to this much-deserved reform.

It is neither fair nor consistent to oppose the prerequisite of systematic pharmaceutical training and at the same time criticise pharmaceutical organizations for failing to bring about the abolition of dispensing by physicians. Ought not the pharmacist to put his own house in order first?

DRUG TRADE CONFERENCE.

There has been an awakening of public conscience regarding the growing dangers of an unrestricted traffic in narcotic and habit-forming drugs. Especially has the fearful demoralization attributed to the spread of the cocaine habit called attention to the necessity for its control. State legislation intended to establish a more careful supervision of the sale of cocaine and other narcotic drugs has been seriously weakened by the interstate character of the traffic. The need for Federal control has been emphasized. There was a probability that pharmacists would be subjected to regulations which though well-intended would be practically impossible to comply with. Appreciating the desirability of an anti-narcotic law which would be effective but not oppressive in its provisions, our Association took the initiative and upon its invitation there have been held two meetings of the National Drug Trade Conference, which were attended by delegates from the five allied national associations. These are the American Pharmaceutical Association, the National Wholesale Druggists Association, the National Association of Manufacturers of Medical Products, the American Association of Pharmaceutical Chemists and the National Association of Retail Druggists. As a result of their labors a bill has been prepared which is admirably adapted to tracing the sales of narcotics and their passage through interstate commerce without imposing undue hardship on either manufacturer, wholesaler or retailer.

In this delicate and difficult matter the constructive advantages of the A. Ph. A., embracing as it does within its membership, representatives of all phases of pharmaceutical activity, have been apparent. It is another example of our Association's affording a forum for the discussion of such many-sided problems, for here the delegates from all branches of the drug trade may meet on an equal footing.

We owe a debt of gratitude to Chairman Wallace and Secretary Beal for their arduous and successful efforts in promoting this conference and in securing the cooperation so necessary for the passage of any measure of this kind.

MEMBERSHIP

I congratulate the Association upon the steady increase in its membership, though I confess to a shade of disappointment that this increase has not been greater. He was a philosopher who said: "It is not so much the position that we occupy on the chess-board of life as it is the direction in which we are moving." And *we* are moving in the right direction, that of progress and success.

The present problem is not only to gain more new members but also to better retain the interest of those already enrolled and to prevent their defection. In the last ten years we have elected to membership approximately 2700 members of whom not more than 1700 retain membership. The loss of fully a thousand



GEORGE M. BERINGER, Camden, New Jersey,
President, 1913-1914.

of these members is too great, though our worthy treasurer, Dr. Whelpley, has been wonderfully successful in his efforts to keep the members paid up and in good standing, and has done much to minimize this loss. Our JOURNAL helps much in maintaining interest, but if we could but prevail on new members to attend at least *one* annual meeting we would have a much better prospect of fixing their allegiance and of assuring their active participation in our work.

CONVENTIONS.

We have had some splendid conventions to which have been devoted an immense amount of time and effort, but we must not be weary of well-doing. We must give our best thought to increasing the interest in and the attendance at

our meetings. Let us keep the general and section sessions within the five days' limit and leave the evening for the entertainment feature. At least one day might profitably be devoted to an excursion or an outing. Popular lectures should be provided and in every way the attractiveness of the annual conventions should be enhanced.

Some years ago we forbade advertising in the local program. Since we now accept and solicit advertising for the JOURNAL, I recommend that this ban on advertising in the program be lifted. Local contributors to the entertainment are entitled to some mention such as a card or modest advertisement in the local program affords. Such advertising should of course be subject to the same censorship as the advertisements in the JOURNAL.

As our Association advances in years and attains to a larger growth, we shall have to consider more carefully the locations for our annual conventions. While the advantages of visiting the various sections of our country are unquestionable, yet the effort should be made to hold at least every other meeting at some place convenient to the larger proportion of our members.

PROCEEDINGS.

In an association such as ours, complete unanimity of opinion is scarcely to be anticipated. When an important change in the activities of the association is made, it may be expected that some will regard the change as being for the worse and will regret the passing of the old order. The more striking and important the change, the sharper will be this note of protest.

So we find a considerable number of our members who lament the discontinuance of the annual "Proceedings" heretofore published, notwithstanding our adoption of the more progressive and evidently advantageous practice of publishing the proceedings in the JOURNAL. It would be but irrational extravagance to republish in an annual volume the papers which have already appeared in the JOURNAL, and to do this for no better reason than to accommodate a few who are indifferent or careless in preserving and binding their copies of the JOURNAL. Rather would it be economy to supply such members with a bound volume of the JOURNAL upon the payment of a small fee, sufficient to cover the cost of binding. Not only our JOURNAL, but other journals of real value must be preserved and bound if the subscriber is to get the largest good from them. If we can teach pharmacists to preserve and bind not ours alone but several good journals we shall have accomplished a great deal for pharmacy.

To compare the annual volume of the Proceedings with the JOURNAL is scarcely fair. There is so much in the JOURNAL that was lacking in the Proceedings that the comparison fails. The editorials, the papers presented at the Branches, the abstracts, the Recipe Book and other valuable features are worth as much for reference as the papers presented at the meeting.

But the Report on the Progress of Pharmacy and the list of members, together with the list of officers, the constitution and by-laws, etc., could be published as a Year Book similar to the so-called "1911 Proceedings." I believe this would be an advantage that would be worth the expense which it would entail, and I recommend that it be brought before the Association for a vote.

ASSOCIATION BUSINESS.

From those members who are conversant with our methods of paying bills has come criticism of the delays caused by our present usage. It is evident that much of this delay could be avoided by simpler procedure which would be equally effective in safeguarding our funds.

Quite properly an annual budget is prepared and submitted to the Council. When this budget has been approved, bills drawn against it and certified to by the officer in charge of the particular work for which the expenditure is made ought to be promptly paid without the necessity of reference to a finance committee. The warrants or checks of the Association should be issued and attested by the Secretary, countersigned by the President and signed by the Treasurer. The books of account should be kept by the Secretary, who should watch against overdraft of the budget appropriations. There would seem to be no need for the signature of the Chairman of the Council on these warrants.

Greater expedition in electing new members is desirable. When an applicant has tendered his membership, he should not be kept waiting for six or eight weeks before he is informed that he is accepted. More frequent council letters will be necessary but the added expense will be well repaid.

VOTING BY MAIL.

Evidently the election of officers by the mail ballot has interested our members, since an increasingly large number have availed themselves of the privilege of voting. It would seem feasible to extend this privilege by allowing the members at large to vote on questions of policy. A "little ballot," cast along with the ballot for officers might be employed to settle once for all such questions as the publication of the annual volume of Proceedings. It is my opinion that if we do more of our business by mail, we will hold the interest of our members better and will lessen the number of lapses.

In view of the increased interest in voting, the tellers should be increased to five.

LOCAL BRANCHES.

Our Branches are winning success but they need all the encouragement that can be given them. It has been suggested that a portion of the dues should go to the local branches. I do not believe that our financial condition warrants the adoption of this suggestion at present, nor do I think that the branches require such financial aid. They have now a commission on each new member and most of them have local dues even though small in amount. It would be helpful if the officers of the Association, especially the Secretary, could visit the branches occasionally. Such visits would stimulate the enthusiasm of the members and awaken fresh interest. Secretary Beal has addressed several of the branches with good results and the plan could well be developed further.

During the past year the Cincinnati Branch was successfully inaugurated and gives promise of growth and vigor. We need branches in some other large centers notably Detroit, Milwaukee and Buffalo. Members in these cities are failing to realize the full advantage of their membership through the absence of local branches and the opportunities that would be afforded thereby.

The presidents and secretaries of the local branches should get together at

our annual convention and compare notes and plans for increasing the usefulness of their branches.

WOMEN'S SECTION.

The Women's Section makes its maiden bow at this meeting. I bespeak for this new section a cordial welcome and generous assistance in perfecting its organization and initiating its work. Its officers have been active in promoting the interests of their Section as well as of the Association as a whole. An opportunity is now offered to women pharmacists to secure the aid and cooperation of their non-professional sisters who are likewise interested in pharmacy and in the A. Ph. A.

Pharmacy appears to be growing in attractiveness for women, judging by the



THOMAS F. MAIN, New York City,
Honorary President, 1912-1913.



JAMES O. BURGE, Nashville,
Local Secretary.

increasing numbers who are entering it. The old prejudices are disappearing and it is generally admitted that women can and do become capable pharmacists. I predict a long and prosperous career for the new section. May it grow in membership, strength and usefulness!

PROCTER MEMORIAL.

Our committee on Wm. Procter, Jr., Monument Fund has nearly completed its labors and will present a favorable report at this meeting, including tentative plans for the erection of a monument to Professor Procter.

A. PH. A. HOME.

The steady growth of our Association and the constantly increasing scope of its efforts for pharmacy have combined to emphasize the need of a center around which these activities may be grouped and from which they may be guided to greater success. Such a nucleus would be afforded by the proposed A. Ph. A. Home.

Let it be clearly understood at the outset that this much desired home is not a charitable institution! We are not competing with other associations who may wish to establish homes for aged, infirm or indigent druggists. The home that we are striving for is to be the headquarters of a virile organization just awakening to a realization of its power and its manifold possibilities and determined to prove its strength in developing the true pharmaceutical spirit among the druggists of our land!

The building which we hope to erect soon, need not be large nor the site costly. Rather it must be well-located where facilities necessary to the work may be provided to advantage. There should be ground sufficient to permit of future additions. The location should be in a large city, convenient to the majority of the members and where facilities will be afforded for printing and binding the publications of the Association. The quarters must be large enough to provide offices for the JOURNAL, suitable space for a library, a laboratory and a museum, as well as storage rooms for the stock of publications and for other property of the Association. Necessarily the building should be of fireproof construction.

The financial problem, then, is to raise a fund sufficient to purchase a site, erect a building and provide for its maintenance. It has been suggested that \$50,000 would be needed for the first two purposes and the possibility that the income from the permanent funds of the Association will take care of the item of maintenance—at least for a time.

The sentiment of the Association is apparently strongly in favor of the projected home and the raising of a sufficient fund should not be exceptionally difficult.

An appeal to our members and to pharmacists generally would no doubt meet with a generous response. The subject should be thoroughly discussed in our sessions and an expression from the House of Delegates should be secured.

THE JOURNAL.

Our JOURNAL has justly received a large measure of praise. It is the exponent not only of our Association, but of the best in American pharmacy. Its finances have furnished an agreeable surprise: the income has exceeded our expectations and the cost of publication is less than we had planned for.

The question arises whether an effort should be made to secure subscribers who are not members in the hope of afterward inducing them to join the Association. Apparently the American Medical Association has followed the plan with great success. If this be done the subscription to the JOURNAL and the year book (if issued) should amount to as much as our annual dues.

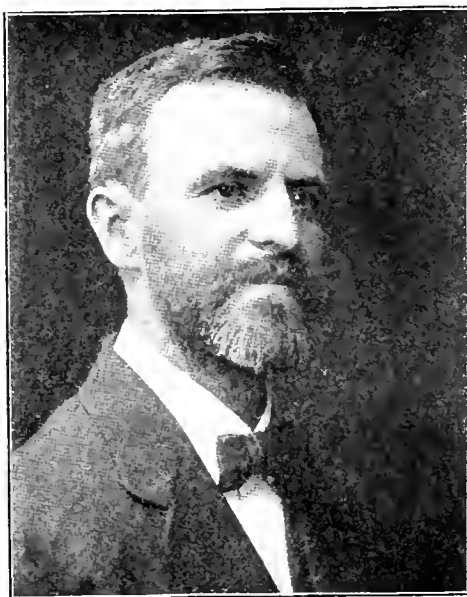
No effort or expense within our means should be spared to add to the attractiveness of the JOURNAL. Nor should its functions as a monthly be restricted

entirely to the immediate interests of the Association. News-letters from the great centers of pharmaceutical activity would be a helpful addition.

The duties of the editor combined with those of general secretary are most arduous. Dr. Beal has discharged these duties with great credit to the Association and himself. But he should have more assistance. An advertising manager would be a paying investment and in recommending that such an officer be employed, I wish it understood that I do not favor in the least the lessening of the restrictions that have been placed around our advertising columns. But an experienced advertising manager would secure for us the advertising support which our JOURNAL merits and should have.



CHARLES M. FORD,
First Vice-President, 1912-1913.



FRANKLIN M. APPLE,
First Vice-President, 1913-1914

More clerical assistance is also needed by the Secretary. I believe that much of the committee work, the expense of which is now borne by the Association, could be economically and efficiently conducted through the Secretary's office. The economies thus effected would go far toward defraying the expense of additional help.

THE PHARMACOPEIA AND THE NATIONAL FORMULARY.

The new Pharmacopœia is approaching completion, while the new National Formulary has been practically ready for publication for some time. It is generally agreed that these standards should make their appearance about the same time and the suggestion has been made that an arrangement between our Association and the Board of Trustees of the U. S. P. might be possible, whereby the two works should be printed in similar style and with pages of uniform size

and even that a number of copies of the standards bound together in one volume and yet distinct from each other might be published.

If this suggestion is feasible such a combined volume would be of great usefulness and convenience to the pharmacists of the country. I heartily concur in the foregoing suggestion and recommend that it be discussed in our Section on Pharmacopœias and Formularies and that our Committee on National Formulary should give it a careful consideration.

We must not overlook the fact that there will undoubtedly be an immense demand for the new National Formulary and our arrangements for its publication should be such as will permit us to supply this demand promptly. I believe we might well adopt the policy that has proved successful in the publication of the Pharmacopœia, that is, to have one firm publish the National Formulary and another firm act as its sales-agent.

A. PH. A. RECIPE BOOK.

A formulary of unofficial preparations is a pharmaceutical necessity. Such a formulary is the proposed A. Ph. A. Recipe Book, a start upon which has already been made through the efforts of Mr. Raubenheimer and his colleagues. It is greatly to be desired that the opportunity provided by this auspicious beginning may not be lost but that the formulary will receive the assistance and cooperation of our membership and will be carried forward to early completion.

Following the procedure already adopted, these recipes should appear monthly in the JOURNAL, and when a sufficient number have accumulated they could be collected and published as a volume.

STATE PHARMACEUTICAL ASSOCIATIONS.

Closer affiliation with the state pharmaceutical associations is greatly to be desired. Our newly-formed House of Delegates provides a real function for the delegates of the state associations and will undoubtedly result in a more than nominal affiliation with the bodies which they represent. In most of the state associations the office of secretary is fairly permanent. I recommend that we invite the secretaries of these state societies to meet together in connection with our annual convention. At such a meeting details of association work, plans for increasing membership and similar topics could be profitably discussed.

SISTER ORGANIZATIONS.

We extend to our sister organizations, the National Association of Retail Druggists and the National Wholesale Druggists' Association, our cordial good wishes. We appreciate their splendid achievements; we offer our cooperation and our assistance in so far as it can be given them consistently. The great field of pharmacy is as yet almost untouched by organized effort and there is surely not only "glory enough" but work enough for all.

CONFERENCE OF FACULTIES.

The American Conference of Pharmaceutical Faculties, though of slower growth, has developed along rather conservative lines, yet it has made substantial progress. Thirty-five schools are now members of the Conference. With practically all of the strong schools included in its membership the Conference should be able not only to determine reasonable and equitable standards for the

admission and graduation of students, but to provide for the gradual raising of these standards, year by year, until they rank as high as the requirements for entrance to other professions. It is right and proper that the schools should take the initiative in establishing higher educational standards, depending upon the good judgment of pharmacists generally to support their more advanced position. The marked advance in the medical profession during the last decade has been very largely to the increased entrance requirements and the strengthened curricula of the medical schools.

AFFILIATED ASSOCIATIONS—BOARDS OF PHARMACY.

The National Association of Boards of Pharmacy has grown rapidly until it now includes thirty-three active and seven associate members. Its efforts to establish a just, yet broad basis of reciprocity which shall be nation-wide in scope, give promise of success in this long-desired and most important work. Fair-minded pharmacists have long recognized that competency justly determined in one state should be accepted in others, but standards had to be adjusted and examinations made more uniform; these troublesome points have now been largely overcome, partly through friendly conference and kindly criticism between the boards, partly through the very general acceptance of the Syllabus as a basis for the examination.

SYLLABUS.

Among the earliest efforts of our Association was the attempt to bring about a uniformity in the system of instruction in pharmaceutical schools; an attempt which approaches realization in the Syllabus.

The revision of the Syllabus has been completed and opportunity will be afforded at this meeting to inspect and criticize this important work. It has been suggested that the publication of the Syllabus should be assumed by our Association. If the Syllabus Committee agrees to this recommendation, I believe that the transfer would be of advantage to all and that the greatest success for the Syllabus would be possible.

It appears likely that the demand for the Syllabus will assure the sale of a sufficient number of copies to defray the expense of publication and that the financial risk assumed by the Association would not be great.

PHARMACISTS IN THE GOVERNMENT SERVICE.

Our Association has been successful in securing increased rank and pay for the naval pharmacists, who will now have commissions and a rank and pay equivalent to that of second lieutenant. Likewise the pharmacists of the United States Public Health Service will have increased pay and commutation. But notwithstanding the energy displayed by our committee and the generous efforts of Congressman Hughes and Senator Bacon, who introduced and strongly supported the measure advocated by our Association, success has not crowned our attempt to secure even a small measure of justice for the pharmacists of the army, included in the Army Hospital Corps. The members of this corps are placed at a peculiar disadvantage in lacking commissioned officers to push their

rightful claims. Their highest rank is sergeant of the first class. Their opportunities for promotion and increase of pay are considerably less than the other corps of the army, which renders this branch of the service less attractive and results in failure to secure the most desirable enlisted men as recruits, resulting in the inevitable deterioration of this important branch of the service. The sick or wounded officers and soldiers are entitled to the best of care, but under present conditions the army nurse and army pharmacist have less opportunity for rank and pay than does the farrier who cares for a sick mule, surely not a pleasant condition to contemplate. I recommend the appointment of a new committee and the granting of a liberal appropriation to renew with better prospects the effort to secure this meritorious legislation at the next session of Congress.

DECEASED MEMBERS.

"To live in hearts we leave behind is not to die."

Among the score or more of our members who have passed into the Great Beyond since our last meeting there are those who are entitled to our deepest gratitude for their labors in behalf of pharmacy and our Association. While our Council has already adopted suitable resolutions in memory of these men, yet we should not allow this occasion to pass without an expression of our sorrow in losing them and of our respect to their memory. I refer especially to former President Oscar Oldberg, former Honorary-President Ewen McIntyre, and Mr. Thomas P. Cook, well remembered for his services as local secretary at the New York meeting. The others who occupied less conspicuous positions are also deserving of our grateful remembrance.

I ask all those present to rise and remain standing in silence for one minute in respect to the memory of our departed friends.

CONCLUSION.

I am deeply grateful to you, my friends, both for the honor you have conferred upon me and the assistance you have given me during my term in this high office. I regret only that my limited abilities have enabled me to make so small a recompense to you. But I have ill deserved your confidence if my year as President has not given me a wider knowledge of our Association and brought me closer in touch with its efforts and activities than I could otherwise have attained. My hope is to serve you in some humbler capacity during the years to come and to thus discharge in part my obligations to you and to our beloved Association.

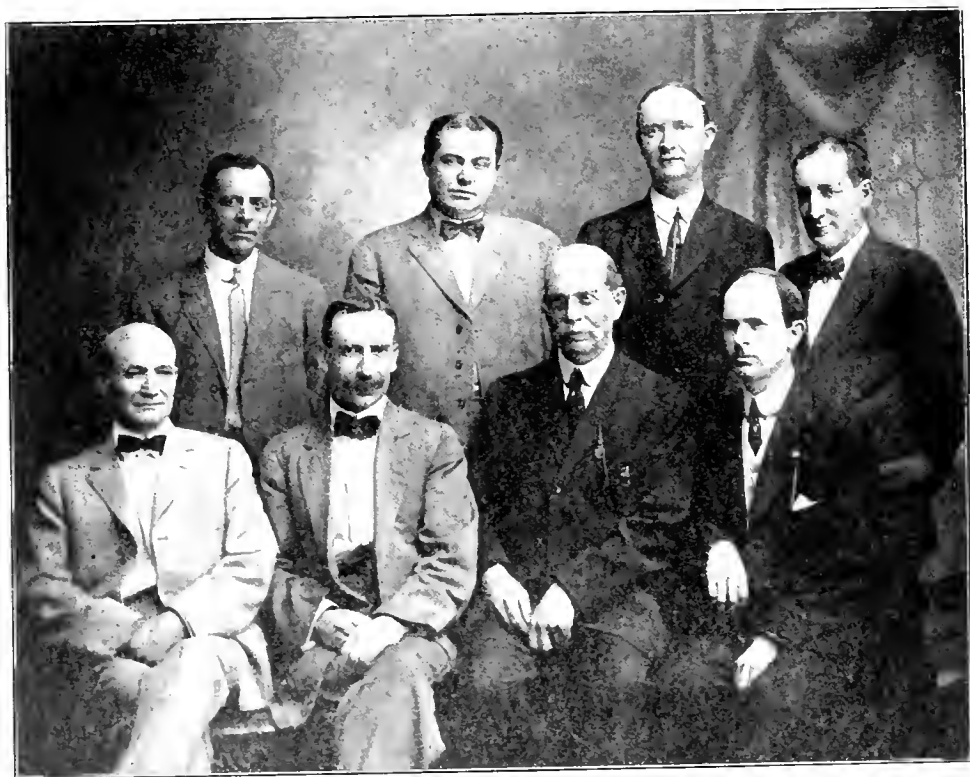
In closing I quote from a recent address of President Vincent of the University of Minnesota: "A man can be himself only as he lives the life of co-operation and comradeship. A profession is a collective personality. Each individual makes contributions to the whole but the materials and the inspiration for his own development are drawn from the common store. Only as men have the imagination to see their lives in their wider relationships, only as they lose their petty personal interests in larger and more generous common purposes can they attain to the true possibility of the personal growth."

REPORT OF THE COMMITTEE ON PRESIDENT'S ADDRESS.

The Committee on President's Address respectfully submits the following report:

We recommend all members of the Association to carefully read the whole of the admirable address of the President.

Very many of the suggestions and recommendations in the address, including the most important ones, have already been brought before the Association by



CHAIRMEN OF THE EIGHT LOCAL COMMITTEES IN CHARGE OF THE ENTERTAINMENT OF THE CONVENTION.

Standing: R. W. VICKERS, M. E. HUTTON, C. C. YOUNG, J. B. SAND.

Sitting: IRA B. CLARK, E. A. RUDDIMAN, J. O. BURGE, W. R. WHITE.

action of the Council. In these cases no further recommendations are made by this committee.

We endorse the attitude of the President in his opposition to nostrums and quackery. We recommend that the Association go on record as favoring the enactment of prerequisite laws by all the states.

We recommend that a vote of appreciation of their work be given to the members of the Drug Trade Conference from the Association.

We recommend that an alphabetical list of contributors to the entertainment be included in the official programs of the annual meetings, without stating amounts of contributions.

We endorse the President's suggestion that every alternate meeting be held at a place near the center of membership of the Association.

We recommend that the Association furnish a suitable binder for holding a year's numbers of the JOURNAL.

We endorse the President's suggestions regarding the simplification of the business and financial affairs of the Association, but no recommendation is necessary on this matter as the Council has already brought it before the Association.

We believe that it is unnecessary to extend the practice of voting by mail, at this time, to include votes on questions of policy.

We recommend that steps be taken to increase the present board of canvassers from three to five members.

We recommend that the question of remitting a part of the dues of members of local branches to the branches, be referred to the Council for consideration.

We endorse the President's suggestion that the officers, particularly the General Secretary, continue to visit the local branches as often as is practicable.

We recommend that the suggestion that a time be set in the program of the annual meeting for the officers of the local branches to meet and discuss their work be referred to the Council.

We recommend that the Council be instructed to continue consideration of the project of a building to serve as a headquarters for the Association. In this connection this Committee suggests that the prospective structure be called the A. Ph. A. *Building*, hereafter, because of the ambiguity of the word "home" which has been used.

The Committee endorses the suggestions of the President concerning the Journal of the Association, and we recommend that these suggestions on such important matters be referred to the Council for action.

We recommend that the suggestions that the U. S. P. and N. F. be issued in uniform style and size of page and that the N. F. be printed by one firm and sold by another, be referred to the Council.

We recommend that the serial publication of the A. Ph. A. Recipe Book in the Journal be continued, the matter of its publication in book form to be taken up later.

The Committee endorses the suggestion that a time be set in the program of the annual meeting at which time the officers of the State Pharmaceutical Associations may meet and discuss their work.

We endorse the recommendation that a committee be continued to further the efforts to secure higher rank for the pharmacists in the U. S. Army, and that the Council make a suitable appropriation of funds for the expenses of that committee.

All of which is respectfully submitted.

T. J. BRADLEY,
E. F. COOK,
F. W. NITARDY,
C. G. MERRELL,
W. R. WHITE,
Committee.

RESOLUTIONS FROM THE HOUSE OF DELEGATES APPROVED
BY THE ASSOCIATION.

1. *Resolved*, That the American Pharmaceutical Association request the United States Department of Agriculture and the United State National Museum to cooperate in securing and caring for a collection of authenticated medicinal plants for the purpose of providing accurate and positive decisions of the many questions that are constantly arising concerning the identity and quality of such products.

2. *Resolved*, That the American Pharmaceutical Association ask the New York State Pharmaceutical Association to furnish more light on the plan of pharmacopœial revision referred to in the resolution submitted by the State Association.

3. *Resolved*, That inasmuch as the American Pharmaceutical Association has invited colleges of pharmacy to offer as a prize to students a year's membership in the Association, the Association provide an appropriate certificate to be given to the students meriting the prize membership.

4. *Resolved*, That the American Pharmaceutical Association further the enactment of state legislation, or rulings by boards of pharmacy that will require each pharmacy and drug store to possess a copy of the text of the latest edition of the United States Pharmacopœia and the National Formulary.

5. *Resolved*, That the American Pharmaceutical Association is unreservedly in favor of the professional education of pharmacists as represented by a college education in pharmacy, of the grade recognized as standard by the American Conference of Pharmaceutical Faculties.

6. *Resolved*, That the American Pharmaceutical Association go on record in favor of legally requiring Methyl Alcohol to be sold under a name that will differentiate it from Ethyl Alcohol or spirits generally, and under a poison label.

7. *Resolved*, That the establishment of permanent official headquarters for the American Pharmaceutical Association is desirable, and commendable.

8. *Resolved*, That we earnestly request our senators and representatives in Congress and instruct our Legislative Committee and our delegates to the National Drug Trades Conference, to urge as strongly as possible the passage of the Bacon-Hughes Bill, which will procure better treatment for the hospital corps of the United States Army.

9. *Resolved*, That the Council be authorized to approve the production of a convenient button or pin style of the official badge of the Association, that may be worn conveniently at all times by members, and that this form of the official badge be distributed to dues-paid members by the treasurer.

10. *Resolved*, That the American Pharmaceutical Association favor the so-called zone system of parcel post, whereunder charge for the transportation of parcels by mail is in proportion to the distance, and that it favor such modification of the present parcel post law as will prevent transportation by mail of prison-made articles of manufacture.

11. *Resolved*, That it is the sense of the American Pharmaceutical Association that in order to minimize the danger of the internal use of poisonous tablets in-

tended for external use only, tablets containing toxic substances in sufficient amount to be dangerous to life if taken internally, should comply with the following requirements:

a. The form, size, markings and color of tablets intended for external use should be distinctive, and the color should preferably be of some water soluble dye, calculated to call attention to the dangerous nature of the tablet when dissolved.

b. Dangerously toxic tablets should be marketed and sold at retail in glass containers only.

c. The labels on such containers should be printed in red on white paper:



CASWELL A. MAYO, New York,
Historian and First Vice-President, 1912-1913.



C. HERBERT PACKARD, East Boston, Mass.,
Third Vice-President, 1912-1913.

should bear the word "poison" in large type, the death's-head symbol, a caution against internal use and against placing the package in the vicinity of medicines to be used internally, and directions for the emergency treatment of accidental poisoning from the use of such tablets.

12. *Resolved*, That the American Pharmaceutical Association recommend to the committees of revision of the United States Pharmacopoeia and the National Formulary that they consider carefully the advisability of including in these books of national standards recommendations for appropriate methods of indicating the dangerous character of poisonous tablets.

13. *Resolved*, That the American Pharmaceutical Association go on record in favor of such a revision of the United States patent and trade-mark laws as will tend to prevent the extortion of exorbitant prices for medicinal and chemical

products patented or trade-marked in the United States, but that it is opposed to the provisions of the present measure, known as the Oldfield Bill, as unfair to inventors and manufacturers alike, and as tending to promote monopoly by compelling inventors and manufacturers for self-protection to keep secret the methods and processes for the preparation of newly discovered medicinal substances.

14. *Resolved*, That the American Pharmaceutical Association request of Congress that it revise the existing internal revenue laws so as to provide for a special nominal tax upon the sale of alcohol for medicinal, scientific, mechanical or pharmaceutical purposes, and the sale of alcohol-containing liquids upon prescriptions, the tax-paid stamp issued for such purpose to be different in design and designation from that issued to the retail dealer in alcoholic liquors for beverage purposes.

15. *Resolved*, That the American Pharmaceutical Association continue its affiliation with the National Drug Trades Conference.

16. *Resolved*, That the American Pharmaceutical Association go on record in favor of the supplementing of Federal anti-narcotic legislation by the enactment of effective anti-narcotic laws uniform in all the states.

17. *Resolved*, That the American Pharmaceutical Association hereby record its appreciation of the valuable services of Honorable Francis Burton Harrison, Dr. Hamilton Wright and the members of the National Drug Trades Conference in the preparation of a bill for the Federal supervision of the traffic in habit-forming narcotic drugs.

18. *Resolved*, That the American Pharmaceutical Association endorse and approve the federal measure known as the Harrison Bill, H. R. 6282, providing for the registration of dealers in narcotic drugs as a reasonable and effective measure to provide means of tracing the principal habit-forming narcotic drugs from the time of their introduction into the United States until they reach the hands of the physician and the retail druggist, and that the Association hereby pledge its influence in favor of the enactment of the aforementioned bill.

19. *Resolved*, That the delegates of the American Pharmaceutical Association to the National Drug Trades Conference be instructed to give consideration to the feasibility of amending Section 7 of Regulation 7 under the federal Food and Drug Act so as to allow the sale of no products deviating from official standards.

20. *Resolved*, That the American Pharmaceutical Association recommend to the Committees of Revision of the United States Pharmacopœia and the National Formulary, the introduction and incorporation in the books of official standards such synonyms as will compel uniformity of product and eliminate the opportunity for unfair competition.

21. *Resolved*, That in the opinion of the American Pharmaceutical Association there is a great need for reform in the matter of the exemption of dispensing physicians and the drugs they dispense from the provisions of the state laws relating to the practice of pharmacy, and the Association go on record in favor of the enactment of state legislation tending to bring about this reform.

22. *Resolved*, That in view of the importance of uniformity in pharmaceutical nomenclature, the delegates from this Association to the approaching meeting

of the Eleventh International Pharmaceutical Congress at The Hague, be instructed to present to that Congress a proposal for the establishment of an Internal Commission on Pharmaceutical Nomenclature to take into consideration the nomenclature of all the drugs, medicines and preparations dealt in by the pharmacist, whether pharmacopoeial or non-pharmacopoeial, and to carry on an active propaganda throughout the world, with a particular view to the prevention of the adoption of names which through their similarity may have a tendency to cause errors in dispensing.

REPORT OF THE GENERAL SECRETARY AND EDITOR OF THE JOURNAL.

J. H. BEAL.

For the Fiscal Year Ending December 31, 1912.

Financial Accounts in Care of the General Secretary.—As required by the provisions of the By-Laws, most of the financial transactions of the Association are in charge of the Treasurer, who collects and receipts for dues, and has the custody of the Invested and Trust Funds. Those who have observed the very efficient manner in which the Treasurer has discharged the duties of his office will not be inclined to suggest any different arrangement.

The financial accounts in the care of the General Secretary are confined to receipts for sale of the National Formulary, Journal Advertisements and Subscriptions, Proceedings, Badges and Bars.

During the fiscal year ending December 31, 1912, the cash receipts of the General Secretary's office were as follows:

From sales of the National Formulary.....	\$3,520 50
Journal Advertising and Subscriptions.....	2,667 89
Proceedings	147 64
Badges and Bars.....	60 87
Miscellaneous	29 64
Total	\$6,426 54

Itemized statements of the above receipts and corresponding remittances to the Treasurer are submitted herewith, together with a Report of the Auditing Committee which checked and compared the statements with the books and accounts of the Treasurer.

The cash received by the General Secretary, and remitted to the Treasurer, during the first half of the present fiscal year, ending June 30, 1913, was as follows:

From sale of the National Formulary.....	\$1,311 89
Journal Advertising and Subscriptions.....	1,667 49
Proceedings	65 51
Badges and Bars.....	4 75
Miscellaneous	27 00
Total	\$3,076 64

Itemized accounts of these receipts will be submitted to the Auditing Committee in regular order, in accordance with the provisions of the By-Laws.

Receipts and Expenditures on Account of the National Formulary.—As shown above, receipts from sales of the National Formulary during the first half of the present fiscal year were \$1,311.89, a decrease as compared with the first half of the preceding year of \$387.65.

Thus far the expenditures on account of the National Formulary for the present fiscal year have amounted to \$615.35, with some bills which have not yet been presented for payment. For the remainder of the present year, and probably for the whole of the next fiscal year, expenditures on account of the National Formulary may be expected to far exceed the receipts from sales, owing to the great expense involved in the preparation of the plates for the revised edition, which will probably be ready for distribution towards the latter part of 1914 or early in the year 1915.

During the year 1912, there were printed and bound 3,500 copies of the National Formulary, most of which were sold during the year 1912. According to the records of the General Secretary there should have been in the hands of the printer, on August 1, the following:

334	Sheets for binding
463	Copies, cloth, plain
133	" " interleaved
82	" sheep, plain
48	" " interleaved

Total.....1,060

Discounts Allowed on National Formulary.—The discounts established when the Third Revision was published, and which are still in force, are as follows:

1 to 10 copies.....	10%
10 to 50 copies.....	15%
Over 50 and less than 100 copies.....	20%
Not less than 100 copies.....	25%

In addition to the above, the Association prepays transportation on all shipments, which amounts to a very material addition to the discount.

It is the opinion of your General Secretary that when the new edition is issued the rate of discount should be increased to that generally allowed by publishers of technical and scientific books, and that the prepayment of transportation should be abandoned, except on single copies sold at full retail price, and forwarded by mail. The present system has been productive of considerable dissatisfaction. Many dealers persistently neglect to take into consideration our prepayment of transportation and insist upon having the discount usually allowed upon medical and pharmaceutical books.

Reports of Shortages on the National Formulary.—On several occasions the Secretary has been notified that book dealers were reporting that they could not obtain National Formularies to fill their orders. As far as the Secretary has been able to ascertain, these reports have emanated from several dealers to whom further shipments were refused until their long overdue accounts had been paid. Some of these accounts still remain unpaid, and a list of them will be presented to the Council at this meeting with a request for instructions as to what disposition shall be made of them.

Method of Publishing and Marketing Revised Edition of the National Formulary.—At present, the printing and publication of the National Formulary are

both in the hands of the General Secretary. Orders for five or more copies are filled from the main stock, which is in the care of the printing company, at Lancaster, Pa. Orders for less than five copies are filled from the Secretary's office, at Scio, Ohio.

At the Denver meeting, the General Secretary recommended that future editions of the work should be printed and published by the Association, as at present, but that its distribution and sale should be placed in the hands of a publishing house which is in touch with the book trade, and possesses the equipment for rapidly handling orders large or small. This recommendation is again made.

Under the proposed plan, each copy would bear upon the title page, before



EUGENE G. EBERLE, Dallas, Tex.,
Chairman of the Council.



FABIUS C. GODBOLD, New Orleans,
Vice-Chairman of the Council, 1912-1913.

delivery to the sales agent, a serially numbered coupon. The books thus numbered would be delivered in large lots to the authorized sales agent, who would be responsible for their subsequent distribution, and would assume the risk of collection. The serially numbered coupons would be in the hands either of the Treasurer or General Secretary, and delivered to the printer for pasting in the books before shipment to the sales agent.

This method has been pursued in the manufacture and sale of the United States Pharmacopoeia for the past ten years, and has proved eminently satisfactory.

Our Antiquated Financial Methods.—The present method for the payment of bills was established at a time when the Association did not have as many bills in

a year as it may now have in a single month. The method is entirely inadequate and should be changed.

According to the By-Laws, every bill must be scrutinized and approved by seven members, distributed from Boston, Mass., to Dallas, Texas; and this applies even to bills for which appropriations have regularly been made, and which have been ordered paid by the Council. As a consequence, it may require a month to obtain the necessary signatures before a warrant can be drawn upon the treasury.

In my opinion, the signatures of but two officers should be necessary, that of the General Secretary upon the warrant upon the treasury, and that of the Treasurer upon the check issued in consequence of such warrant. I therefore recommend that our By-Laws be modified accordingly.

Membership Campaign.—Since the Denver meeting, a constant campaign for new members has been conducted by the regular Committee on Membership, by the local committees at Nashville, and from the General Secretary's office. Results, while gratifying, have been far from satisfactory. I am convinced that the only thing necessary to increase the membership of the Association to a point that will be commensurate with its importance and its services to pharmacy is the hearty cooperation of all of its present members. If the present members will charge themselves with the duty of making a special campaign for only one year, our membership roll will be doubled.

Membership Committee.—The Report of the Membership Committee will show that the plans and methods of the former Chairman have been continued, with good results, by the present Chairman, Prof. A. H. Clark. After some study of the subject, your General Secretary is inclined to recommend that the present Membership Committee, which is so large as to be unwieldy, be broken up into a number of District Committees, each district to consist of a group of contiguous states, and each committee to have its own chairman.

In addition to district committees, there should also be special committees to appeal to different classes of pharmacists, as, for example, a committee on membership from colleges of pharmacy, one on membership from boards of pharmacy, one on membership of workers in scientific laboratories, one on membership of food and drug chemists, etc.

By such a division of the work the territory would be more carefully canvassed; the members of the committees would feel greater individual responsibility, and the character of applicants could be more carefully scanned.

It is coming to be more and more recognized that membership in the A. Ph. A. is an honorable distinction in pharmacy, and in order that this distinction be maintained it is increasingly necessary that we be careful in the selection of those who are invited to become members, and of those who apply for membership without invitation.

Local Branches.—A new Branch has been established at Cincinnati, and began its activities with a large and enthusiastic membership consisting of the best known pharmacists of that city. Several very successful meetings were held during the spring months, and much is looked for from this Branch in the future.

During the year, the Secretary has also been in correspondence with members in cities where local branches might very profitably be established, and it is quite likely that two, and possibly three, new Branches will be established before the next meeting of this Association.

Editorial Policy of the Journal.—The editorial policy entered upon with the establishment of the JOURNAL has been continued, namely, to make it specifically the organ of the Association, and to confine it mainly to the representation of the Association's important activities. The Editor is still convinced that this is the best policy to pursue, and that the Association should not aim to enter the field of general pharmaceutical journalism; a field already amply filled and ably cultivated. Should the JOURNAL seek to usurp the functions of a general pharmaceutical publication, it would not only require a large editorial and clerical staff, but would naturally need to lessen the amount of space that could be devoted exclusively to Association matters. This subject is referred to for the reason that some few of our members have been inclined to urge upon the Editor the widening of the scope of the publication and the addition of new departments.

In selecting the contents for each number, the Editor has taken into consideration the fact that our Association possesses a very diverse membership, distributed over almost the entire globe, and interested in almost every phase of pharmaceutical work.

Some of our members who are interested in purely scientific pursuits would like to see the JOURNAL devoted exclusively to the publication of scientific and technical papers, while others have offered the suggestion that it be confined mainly to the publication of material relating to commercial or so-called practical pharmacy. For example, one member says, "Let the JOURNAL be confined to purely scientific pharmacy; the other journals supply sufficient information for those who are concerned only with the commercial end of the drug business." Another says, "Cut out the scientific dope, and give us more information on how to make some money out of the drug business."

With neither of these views has the Editor been able to agree, and he has therefore, to the best of his ability, endeavored to make each number of the JOURNAL representative of the diversified interests which the Association represents so that every member might find in each number something of particular interest to him.

Criticisms similar to the above have, however, been few, and the number of commendatory expressions has been far greater than the Editor could reasonably have expected, realizing as he does his lack of preparation for editorial work.

Size and Scope of the Journal.—In 1912 the total number of printed pages, exclusive of advertising, was 1466. During the present year, probably not less than 1600 pages will be required, and it does not seem possible to adequately represent all of the activities of the Association in smaller compass.

The expense of publishing the JOURNAL will be fully dealt with in the report of the Publication Committee, which report will, however, show that the expense has been far less than was originally anticipated and that, as a matter of fact, the JOURNAL is at the present time a paying proposition.

Advertising.—Naturally, with his many other duties and limited clerical help, it has been impossible for the Editor to do much effective work in the solicitation of advertising; nevertheless, the appreciation of the value of the JOURNAL as a publicity medium has constantly grown and is becoming more and more recognized by advertisers to the drug trade. The fact that only the very highest class of advertising is admitted to its columns is recognized as being of itself in the nature of a certificate of merit to the firms which are thus represented. I hereby renew the recommendation made at the Denver meeting, that an advertising solicitor be employed, and that he be one capable of rendering much needed assistance in editorial work.

Permanent Association Headquarters.—During the past year one of the questions proposed by the Editor for general discussion has been that of an Association Home or Permanent Official Headquarters. The proposition seems to have met with quite general favor; literally hundreds of letters dealing with the question having been received; so many, in fact, that the original intention of publishing all of them had to be abandoned for lack of space. The consensus of opinion is as follows:

(1) That the Association should own its official headquarters, consisting of a fire-proof building, providing office rooms, museum, library, storage for the Association archives, and a research laboratory.

(2) That the official headquarters should be located in one of the larger cities, possessed of abundant facilities for printing and binding the Association publications, and with good railroad and postal facilities.

(3) That only the physical maintenance of the building, such as heat, insurance, taxes, and janitor service, should be chargeable upon the general revenues of the Association; and that research activities should be begun and carried on only when sufficient special funds have been accumulated for that purpose.

Out of the multitude of communications received, only one member deemed such a home and laboratory unnecessary. All of the others have favored the proposition, though numerous ones have submitted a caution to the effect that such an establishment should not be entered upon until the Association is well assured of its ability to provide for its proper maintenance.

In view of the general unanimity with which the headquarters proposition has been received, it is the opinion of the General Secretary that it will be advisable to inaugurate, at this present meeting, steps for the collection of funds for the purchase of a site and for the erection, equipment and maintenance of a building. When a sufficient sum has been collected or subscribed for these purposes, it will then be time enough to consider the question of location.

Respectfully submitted,

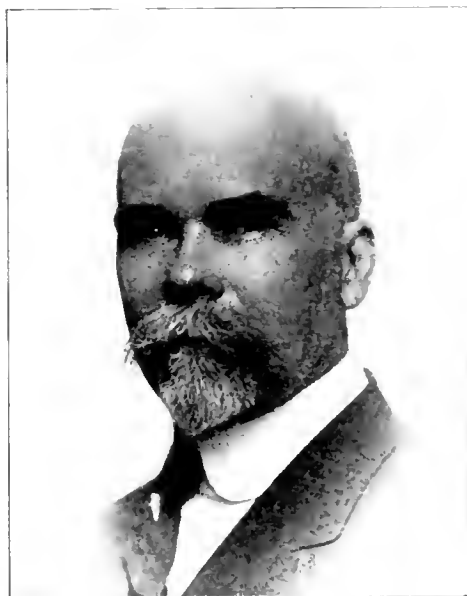
JAMES H. BEAL,
General Secretary.

SOME ADDITIONAL EXPERIENCES OF A TREASURER.

DR. H. M. WHELPLEY, ST. LOUIS, TREASURER A. PH. A.

When assuming the duties of treasurer in 1909, I determined on a course of work intended to test the application of ordinary commercial methods to the collection of A. Ph. A. dues. Owing to a change in the fiscal year and other amendments to the by-laws, it required three years to place my plans in full operation. At the 1912 meeting, I reported satisfactory progress and during the past twelve months I have become fully convinced that the A. Ph. A. membership can be maintained with accounts paid, the same as they are paid with firms with whom our members transact business.

Members Intend to Pay Promptly. I find that the A. Ph. A. members desire to be prompt in the payment of dues but the accounts are overlooked unless the



HENRY M. WHELPLEY St. Louis,
Treasurer.

treasurer is as energetic in giving them attention the first of each month as is the financial department of a jobbing or manufacturing firm in looking after its delinquent customers. I quote from members, as follows:

"I must humbly beg pardon for my neglect."

"Yes, I overlooked my dues this year but will be prompt hereafter."

"Your suggestion to 'act on the good impulse of the moment' is inspiring and here is \$5.00."

"This time \$5.00 and an apology. Next year, \$5.00 again but no apology, for I will remit on time."

Some Members are Insurgents. It is not to be expected that a membership like that of the A. Ph. A. can be changed from a custom of two or three years' delinquency to a practice of prompt payment within thirty days, without some friction. I will give a few extracts from my correspondence to illustrate this fact.

After seven letters without a reply, a member responded to the eighth and inquired, "By what authority do you propose to drop me?" When informed on this point, he sent \$5.00.

One man wrote: "I have been a member just thirty years and never paid before the end of the year. If you do not want such members, then drop me."

Many are Interested in the Treasurer's Methods. I make it a rule to take my work good-naturedly and handle each individual case as circumstances dictate. It is encouraging to find that those who become delinquent through accident or force of circumstances also maintain composure as is shown by these sample expressions.

"It was amusing to read some of the letters received by you while endeavoring to collect back dues; no doubt, you felt at times—as our wards of the Far East express it—'No can do,' but the results certainly showed well directed effort on your part. Let the good work go on."

"Good General! following up close; if we ever have war with Mexico, I propose your name, the enemy could not slip away from you. Sorry you had to waste so much paper and stamps on me. Give me a good scolding at Nashville."

"Your letters have therapeutic potency. They are rubifacient and stimulating but not vesicant nor irritating."

The most gratifying development and one which goes far in justifying my departure from the routine methods of a treasurer is the fact that the membership as a whole enters into my work and heartily supports my efforts to secure prompt payments. The following are a few of the many expressions I have on file, showing that the A. Ph. A. membership, taken as a whole, is in accord with my policy.

"I shall try your plan on our state association delinquents. Perhaps I will have to send for you to work it."

"Here is \$10.00 and the suggestion that you be made treasurer ad infinitum."

The prompt payment of dues does not mean as much to a pharmaceutical association as it does to a business concern. A pharmaceutical organization is not a commercial enterprise but I believe associations would be more successful if ordinary business methods were observed in conducting financial matters. The success of the time payment plan demonstrates that people will meet simple obligations at frequent intervals when they will not pay the aggregate amount at one time. The prompt payment of annual dues is similar to monthly installments on the price of a piano. The association member who is permitted to run two or more years behind with his dues is likely to forfeit his membership, thus members are saved to the association by securing early yearly payments. The dues-paid members are the ones who feel most satisfied with the association and themselves and consequently are the most useful members. I estimate

that previously the average A. Ph. A. member paid his dues when delinquent for more than one year. The present plan means the earning of twelve months' interest for the association.

REPORT OF THE TREASURER.

H. M. WHELPLEY, ST. LOUIS.

January 1, 1912, to January 1, 1913.

Receipts.

Cash on hand January 1, 1912.....		\$7,490 87
Annual dues 1908 (July 1, 1908, to July 1, 1909) \$	5 00	
Annual dues 1909 (July 1, 1909, to July 1, 1910)	35 00	
Annual dues 1910 (July 1, 1910, to July 1, 1911)	385 00	
Annual dues 1911 (July 1, 1911, to July 1, 1912)	1,255 00	
Annual dues and Journal 1912 (July 1, 1912, to Jan. 1, 1913).....	3,707 50	
Annual dues and Journal 1912 (July 1, 1912, to July 1, 1913).....	1,300 00	
Annual dues and Journal 1913 (Jan. 1, 1913, to Jan. 1, 1914).....	3,885 00	
Annual dues and Journal 1914 (July 1, 1914, to July 1, 1915).....	5 00	
Dues only	28 50	
Journal only	26 25	
		<hr/>
		\$10,632 85
Sale of 5 parchment certificates at \$5.00.....	25 00	
Sale of 5 paper certificates at \$3.00.....	15 00	
		<hr/>
		40 00
National Formulary	3,137 78	
Badges and Bars.....	60 87	
Bulletin of the A. Ph. A.....	2 14	
Proceedings	146 27	
Journal Advertising	2,607 29	
Interest on Bonds.....	\$ 400 00	
Interest on Deposits, International Bank.....	246 88	646 88
		<hr/>
Bank Exchange		3 90
		<hr/>
		\$17,277 47
Hallberg Memorial Fund, interest and contributions	\$ 104 55	
Hallberg Memorial Fund, placed in current fund for disbursement	3,366 82	
		<hr/>
		\$3,471 37
Centennial Fund	30 00	
Life Membership Fund.....	415 00	

Procter Monument Fund.....	121 35	
Endowment Fund	10 00	
Ebert Legacy Fund, interest on deposits.....	\$ 109 30	
Ebert Legacy Fund, placed in current fund for disbursement	12 95	
	<hr/>	122 25
		<hr/>
		4,169 97
Total		<hr/>
		\$28,938 31

Disbursements by Voucher Checks.

Jan. 15, Check 1930.	John Mors Co., Membership Committee....	\$ 5 78	
Jan. 15, Check 1931.	E. F. Greathead, miscellaneous expenses....	91 50	
Jan. 15, Check 1932.	Automatic Addressing Co., Journal (Bulletin)	3 14	
Jan. 15, Check 1933.	Louis C. Hesse, printing, postage, stationery.	8 50	
Jan. 15, Check 1934.	C. Lewis Diehl, salaries.....	600 00	
Jan. 15, Check 1935.	J. H. Beal:		
	Salaries	\$1,000 00	
	Clerical	57 50	
	National Formulary.....	9 69	
	Miscellaneous expenses.....	14 85	
	Journal	\$2 10	
	Bulletin	1 65	
	Section on Historical Pharmacy..	1 74	
	Membership Committee.....	18	
	Com. on Unofficial Standards....	20	1,087 91
Feb. 1, Check 1936.	Geo. M. Beringer, Committee on Unofficial Standards		25 24
Feb. 1, Check 1937.	Wickersham Printing Co.:		
	National Formulary.....	47 22	
	Proceedings	10 45	57 67
Feb. 1, Check 1938.	Regan Printing House, Journal (Bulletin)..		230 04
Feb. 1, Check 1939.	Henry M. Whelpley:		
	Printing, postage, stationery.....	32 46	
	Miscellaneous expenses.....	4 30	36 76
Feb. 12, Check 1940.	E. F. Greathead, printing, postage, stationery		11 90
Feb. 12, Check 1941.	W. J. Norris, Journal.....		24 00
Feb. 12, Check 1942.	American Medical Association, Membership Committee		5 70
Feb. 12, Check 1943.	Wm. B. Day:		
	Journal (Bulletin).....	\$ 8 00	
	Membership Committee.....	10 00	18 00
Feb. 20, Check 1944.	Louis C. Hesse, printing, postage, stationery.		24 00
Feb. 20, Check 1945.	The Stoneman Press Co., Journal.....		354 32
Feb. 20, Check 1946.	John Mors Co., Membership Committee....		3 60
Feb. 20, Check 1947.	L. A. Druehl, Membership Committee.....		14 00
Feb. 20, Check 1948.	Henry M. Whelpley, printing, postage and stationery		43 95
Mar. 4, Check 1949.	The Stoneman Press Co.:		
	Printing, postage and stationery..	\$ 5 00	
	Journal	15 50	20 50
Mar. 4, Check 1950.	The Dewey Printery, printing, postage and stationery		13 50
Mar. 4, Check 1951.	Wm. B. Day, Membership Committee.....		10 00
Mar. 4, Check 1952.	J. W. England, printing, postage, stationery.		34 21

Mar. 4, Check 1953.	The Stoneman Press Co.:		
	Journal	\$353 03	
	Printing, postage and stationery..	10 00	363 03
Mar. 4, Check 1954.	J. C. Block, miscellaneous expenses.....		12 50
Mar. 22, Check 1955.	M. I. Wilbert, National Formulary, exper- imental		31 30
April 3, Check 1956.	Louis C. Hesse, printing, postage, stationery.		22 00
April 3, Check 1957.	Chas. Caspari, Jr., miscellaneous expenses...		32 77
April 5, Check 1958.	E. F. Greathead, printing, postage, stationery		11 90
April 5, Check 1959.	Wickersham Printing Co., National Formu- lary, general.....		37 25
April 5, Check 1960.	Wm. B. Day, Membership Committee.....		10 00
April 5, Check 1961.	The Stoneman Press Co.:		
	Journal	\$ 1 25	
	Printing, postage and stationery..	6 75	
	Com. on Status of Pharmacists..	4 50	12 50
April 11, Check 1962.	The Stoneman Press Co., Journal.....		285 44
April 11, Check 1963.	Buxton & Skinner, miscellaneous expenses		13 07
April 11, Check 1964.	Louis C. Hesse, printing, postage, stationery		14 25
April 11, Check 1965.	Edward Kremers, Section on Historical Phar- macy		45 00
April 20, Check 1966.	Wickersham Printing Co.:		
	National Formulary.....	\$125 16	
	Proceedings	4 54	129 70
April 20, Check 1967.	J. H. Beal:		
	Clerical	56 00	
	Office Equipment.....	17 15	
	Printing, postage and stationery..	18 91	
	National Formulary, general.....	2 06	
	Journal	65	
	Miscellaneous expenses.....	4 38	99 15
April 20, Check 1968.	J. H. Beal:		
	Clerical	\$ 73 30	
	Printing, postage and stationery..	5 20	
	National Formulary, general.....	5 64	
	Miscellaneous expenses.....	4 70	88 84
April 20, Check 1969.	The Stoneman Press Co., printing, postage and stationery		5 00
April 20, Check 1970.	St. Louis Branch, A. Ph. A., Membership Committee		14 00
May 1, Check 1971.	J. H. Beal:		
	Clerical	\$ 73 65	
	National Formulary, general.....	3 11	
	Miscellaneous expenses.....	37 20	
	Proceedings	2 10	
	Printing, postage and stationery..	5 00	
	Membership Committee.....	1 24	
	Journal	8 76	131 06
May 1, Check 1972.	The Stoneman Press Co., Journal.....		388 90
May 1, Check 1973.	W. B. Day, Membership Committee.....		15 00
May 10, Check 1974.	The Stoneman Press Co., Journal.....		14 25
May 10, Check 1975.	E. F. Greathead, printing, postage, stationery		11 90
May 10, Check 1976.	John Mors Co., Membership Committee.....		6 00
May 10, Check 1977.	J. W. England, printing, postage, stationery.		16 28
May 10, Check 1978.	H. M. Whelpley:		
	Printing, postage and stationery..	\$ 65 60	
	Miscellaneous expenses.....	28 75	94 35

May 18, Check 1979.	Louis C. Hesse, printing, postage, stationery.	14 75
May 18, Check 1980.	W. T. Robinson, Membership Committee...	4 50
May 18, Check 1981.	Alpha Photo Engraving Co., Proceedings...	30 00
May 18, Check 1982.	Denver Branch, A. Ph. A., Membership Committee	10 00
May 18, Check 1983.	J. H. Beal, salaries.....	1,000 00
June 12, Check 1984.	Louis C. Hesse, printing, postage, stationery.	12 75
June 12, Check 1985.	Wickersham Printing Co.:	
	Proceedings	\$ 7 50
	National Formulary.....	17 25
June 12, Check 1986.	Christopher Koch, National Legislation Com.	39 50
June 12, Check 1987.	Fred A. Hubbard, National Legislation Com.	60 00
June 12, Check 1988.	The Stoneman Press Co., Journal.....	399 74
June 12, Check 1989.	W. B. Day, Membership Committee.....	10 00
June 12, Check 1990.	Alpha Photo Engraving Co., Proceedings...	6 60
June 12, Check 1991.	Geo. M. Beringer, National Formulary.....	34 20
June 12, Check 1992.	John Mors Co., Membership Committee....	2 95
June 12, Check 1993.	E. F. Greathead, printing, postage, stationery	4 50
June 12, Check 1994.	J. H. Beal:	
	Clerical	\$ 74 70
	National Formulary, general.....	3 30
	Printing, postage and stationery..	18 57
	Journal	65 01
	Miscellaneous expenses.....	4 55
		166 13
June 24, Check 1995.	John C. Wallace, Committee on National Legislation	25 75
June 24, Check 1996.	Alpha Photo Engraving Co., Proceedings...	6 35
June 24, Check 1997.	The Stoneman Press Co., Journal.....	4 50
June 24, Check 1998.	J. H. Beal:	
	Clerical	\$ 76 00
	National Formulary.....	22
	Proceedings	75
	Miscellaneous expenses.....	1 00
	Journal	1 00
	Printing, postage and stationery..	9 75
		88 72
June 24, Check 1999.	Louis C. Hesse, printing, postage, stationery.	9 25
July 2, Check 2000.	The Stoneman Press Co., Journal.....	5 55
July 2, Check 2001.	Wickersham Printing Co., National Formulary	45 00
July 2, Check 2002.	W. B. Day, Membership Committee.....	12 10
July 15, Check 2003.	The Stoneman Press Co., Journal.....	406 79
July 15, Check 2004.	W. B. Day, miscellaneous expenses.....	5 00
July 18, Check 2005.	The Stoneman Press Co.:	
	Membership Committee.....	\$ 5 50
	Journal	3 50
	Printing, postage and stationery..	5 00
	Annual Register (special appropriation)	13 00
		27 00
July 18, Check 2006.	H. M. Whelpley, printing, postage, stationery	36 96
July 18, Check 2007.	Eckenrode & Myers, National Formulary Insurance	2 75
July 18, Check 2008.	F. W. Nitardy, Treas. Denver Branch, Membership Committee.....	13 00
July 22, Check 2009.	Wickersham Printing Co.:	
	National Formulary.....	\$ 74 84
	Proceedings	18 13
		92 97

July 22, Check 2010.	The Stoneman Press Co., printing, postage and stationery.....		3 50
July 22, Check 2011.	J. H. Beal:		
	Clerical	\$ 73 35	
	Printing, postage and stationery..	21 30	
	Proceedings	1 60	
	National Formulary.....	1 19	
	Miscellaneous expenses.....	3 79	
	Journal	22 14	123 37
Aug. 14, Check 2012.	H. M. Whelpley, printing, postage, stationery		43 40
Aug. 14, Check 2013.	Louis C. Hesse, printing, postage, stationery		5 25
Aug. 14, Check 2014.	W. B. Day, Membership Committee.....		15 00
Aug. 14, Check 2015.	John Mors Co., Membership Committee....		6 90
Aug. 14, Check 2016.	The Stoneman Press Co., Journal.....		422 27
Aug. 14, Check 2017.	Dewey the Printer, Membership Committee.		22 00
Sept. 11, Check 2018.	C. Lewis Diehl, Salaries.....		600 00
Sept. 11, Check 2019.	The Stoneman Press Co.:		
	Printing, postage and stationery..	\$ 14 00	
	Journal	364 24	378 24
Sept. 20, Check 2020.	J. W. England:		
	Printing, postage and stationery..	\$ 14 88	
	Traveling expense.....	116 30	131 18
Sept. 20, Check 2021.	C. Lewis Diehl:		
	National Formulary experiments.	24 50	
	Proceedings	1 10	25 60
Sept. 20, Check 2022.	John Mors Co., Membership Committee....		6 75
Sept. 20, Check 2023.	Louis C. Hesse, printing, postage, stationery.		11 75
Sept. 20, Check 2024.	E. F. Greathead, printing, postage, stationery		11 90
Sept. 20, Check 2025.	Wickersham Printing Co., National Formulary		68 84
Sept. 20, Check 2026.	J. H. Beal:		
	Clerical	\$ 76 00	
	Printing, postage and stationery..	22 20	
	Journal	19 38	
	Miscellaneous expenses.....	2 40	120 07
Sept. 20, Check 2027.	A. H. Fetting, badges and bars.....		28 00
Sept. 20, Check 2028.	Thomas Multigraphing Co., printing, postage and stationery.....		5 00
Sept. 20, Check 2029.	John C. Wallace, Section on Education and Legislation		6 00
Sept. 20, Check 2030.	John G. Godding, printing, postage, stationery		28 07
Sept. 20, Check 2031.	Geo. M. Beringer, Committee on Unofficial Standards		62 53
Sept. 20, Check 2032.	P. Henry Uech, Section on Practical Pharmacy and Dispensing.....		13 95
Sept. 20, Check 2033.	Clyde M. Snow, printing, postage, stationery		1 50
Oct. 2, Check 2034.	H. M. Whelpley, Salaries.....		500 00
Oct. 2, Check 2035.	Frederick T. Gordon, Section on Historical Pharmacy		2 25
Oct. 2, Check 2036.	J. H. Beal:		
	Salaries	\$1,000 00	
	Clerical	76 00	
	National Formulary.....	7 43	
	Miscellaneous expenses.....	2 40	
	Printing, postage and stationery..	5 00	1,090 83
Oct. 11, Check 2037.	J. H. Beal, traveling expense, special.....		400 00

Oct. 11, Check 2038.	Wilber J. Teeters, Section on Education and Legislation	6 34	
Oct. 11, Check 2039.	F. W. Nitardy, Sec'y., Membership Com...	26 00	
Oct. 16, Check 2040.	The Stoneman Press Co.: Printing, postage and stationery..	\$ 53 75	
	Journal	448 98	502 73
Oct. 16, Check 2041.	Wickersham Printing Co.: National Formulary.....	188 01	
	Proceedings	30 82	218 83
Oct. 16, Check 2042.	J. H. Beal: Clerical	73 35	
	Journal	23 73	
	Printing, postage and stationery..	70 98	
	Miscellaneous expenses.....	10 05	
	National Formulary, general.....	1 15	179 26
Oct. 24, Check 2043.	Fred T. Gordon, Section on Historical Pharmacy		5 25
Oct. 24, Check 2044.	Wm. B. Day, Sec. & Treas. Chicago Branch, membership expenses.....		14 00
Nov. 1, Check 2045.	W. T. Robinson, Membership Committee....		6 00
Nov. 1, Check 2046.	Wm. B. Day, Membership Committee.....		10 00
Nov. 1, Check 2047.	G. D. Spiker & Son, miscellaneous expenses.		36 67
Nov. 7, Check 2048.	J. W. England, salaries.....		150 00
Nov. 7, Check 2049.	Geo. F. Payne, Status of Pharmacists.....		250 00
Nov. 7, Check 2050.	Louis C. Hesse, printing, postage, stationery		27 10
Nov. 16, Check 2051.	The Stoneman Press Co.: Printing, postage and stationery..	\$ 19 50	
	Journal	388 88	408 38
Nov. 16, Check 2052.	Midland Publishing Co.: Printing, postage and stationery..	5 65	
	Journal	3 60	9 25
Nov. 16, Check 2053.	Wickersham Printing Co., National Formulary, general.....		136 50
Nov. 16, Check 2054.	Title Guaranty Trust Co., miscellaneous expenses		5 00
Nov. 16, Check 2055.	J. H. Beal: Clerical	\$ 76 00	
	Printing, postage and stationery..	1 25	
	Miscellaneous expenses.....	11 75	89 00
Nov. 25, Check 2056.	Wilber J. Teeters, Section on Education and Legislation		12 38
Nov. 25, Check 2057.	Louis C. Hesse, printing, postage, stationery		2 20
Dec. 2, Check 2058.	J. Leon Lascoff, Section on Pharmacy and Dispensing		5 90
Dec. 2, Check 2059.	American Bonding Co., treasurer's bond....		37 50
Dec. 2, Check 2060.	St. Louis Branch, A. Ph. A., Membership Committee		18 00
Dec. 9, Check 2061.	Louis C. Hesse, printing, postage, stationery		12 25
Dec. 9, Check 2062.	A. H. Clark, Membership Committee.....		5 00
Dec. 9, Check 2063.	The Stoneman Press Co.: Printing, postage and stationery..	\$ 3 00	
	Journal	444 78	447 78
Dec. 10, Check 2064.	Louis C. Hesse, printing, postage, stationery		4 75
Dec. 10, Check 2065.	McLean & Boone, Journal (stenographers).		350 00

Dec. 10, Check 2066.	J. H. Beal:		
	Clerical	\$ 87 62	
	Printing, postage and stationery..	27 25	
	Journal	24 60	
	Miscellaneous expenses.....	24 22	163 69
Dec. 19, Check 2067.	J. H. Beal, salaries.....		1,000 00
Dec. 19, Check 2068.	H. M. Whelpley, salaries.....		500 00
Dec. 19, Check 2069.	C. Lewis Diehl, salaries.....		600 00
Dec. 19, Check 2070.	J. W. England, salaries.....		150 00
Dec. 27, Check 2071.	H. M. Whelpley:		
	Traveling expenses.....	\$ 85 50	
	Printing, postage and stationery..	85 16	
	Miscellaneous expenses.....	18 75	189 41
Dec. 27, Check 2072.	J. W. England, printing, postage, stationery		18 02
Dec. 27, Check 2073.	Louis C. Hesse, printing, postage, stationery		9 25
Dec. 27, Check 2074.	A. H. Clark, Membership Committee.....		10 60
Dec. 27, Check 2075.	The Stoneman Press Co.:		
	Journal	\$ 6 25	
	Printing, postage and stationery..	4 50	
	Miscellaneous expenses.....	11 00	21 75
Dec. 27, Check 2076.	J. H. Beal, traveling expenses.....		98 50
			<hr/> \$17,103 16

Disbursed from Hallberg Memorial Fund by Check.

April 11, Check 2484.	American Bond and Mortgage Co.,		
	Interest on taxes.....	\$ 82 50	
May 20, Check 2485.	American Bond and Mortgage Co.,		
	Theresa Hallberg loan.....	3,043 54	
April 14, Check 2483.	Chicago Exchange, taxes on the		
	Hallberg home.....	106 36	
Aug. 14, Check 2486.	Chicago Exchange, paving of alleys	71 31	
Oct. 17, Check 2482.	Chicago Exchange, Mrs. C. S. N.		
	Hallberg	63 11	
			<hr/> 3,366 82

Disbursed from Ebert Legacy Fund by Check.

Feb. 8, Check 2487.	Taxes, Carlton Prouty, collector.....		12 95
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Cash Received and Disbursed Without Checks.

Centennial Fund	\$ 30 00	
Ebert Legacy Fund.....	109 30	
Life Membership Fund.....	415 00	
Procter Monument Fund.....	121 35	
Hallberg Memorial Fund.....	104 55	
Endowment Fund	10 00	
		<hr/> 790 20

Total amount of disbursements.....	<hr/> \$21,273 13
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Summary of Disbursements.

Salaries	\$7,100 00
Journal	5,095 97
Printing, stationery and postage.....	1,010 80
Miscellaneous expenses	380 69
Badges and bars.....	28 00

Clerical expense for Secretary's office.....	890 62	
Proceedings	119 94	
National Formulary	863 86	
Traveling expenses	300 00	
Traveling expense, special, for Dr. Beal.....	400 00	
Insurance	2 75	
Premium on Treasurer's Bond.....	37 50	
Annual Register	13 00	
Committee on National Legislation	125 25	
Committee on Unofficial Standards	87 97	
Committee on Status of Pharmacists.....	254 50	
Committee on Membership	293 20	
Section on Practical Pharmacy	19 85	
Section on Education and Legislation	24 72	
Section on Historical Pharmacy	54 24	
	<hr/>	\$17,103 16
Payment out of Hallberg Memorial Fund.....		3,366 82
Payment out of Ebert Legacy Fund.....		12 95
To Hallberg Memorial Fund.....	\$104 55	
To Ebert Legacy Fund.....	109 30	
To Centennial Fund	30 00	
To Life Membership Fund.....	415 00	
To Procter Monument Fund.....	121 35	
	<hr/>	790 20
		<hr/>
Total amount of Disbursements.....		\$21,273 13
Cash on hand January 1, 1913.....		7,665 18
		<hr/>
Total		\$28,938 31

A. Ph. A. Appropriations and Disbursements, January 1, 1913.

	Appropriations	Expenditure
Salaries	\$5,500 00	\$7,100 00
Journal	5,050 00	5,095 97
Printing, stationery and postage.....	1,000 00	1,010 80
Miscellaneous expenses	500 00	380 69
Badges and bars.....	75 00	28 00
Clerical expense for Secretary's office.....	1,000 00	890 62
Proceedings	1,550 00	119 94
National Formulary	1,728 62	863 86
Traveling expenses	200 00	300 30
Traveling expense, special, for Dr. Beal.....	400 00	400 00
Insurance	50 00	2 75
Premium on Treasurer's bond.....	37 50	37 50
Annual Register	25 00	13 00
Committee on National Legislation	117 65	125 25
Committee on Unofficial Standards	300 00	87 97
Committee on Status of Pharmacists	250 00	254 50
Section on Practical Pharmacy	25 00	19 85
Section on Education and Legislation.....	25 00	24 72
Section on Historical Pharmacy	50 00	54 24
Committee on Membership.....	375 00	293 20
Journals for Reporters.....	35 00	
Certificates	50 00	
Section on Commercial Interests	25 00	

Section on Scientific Papers	25 00	
National Syllabus Committee.....	25 00	
Appropriation	\$18,418 77	\$17,103 16
Expenditure	17,103 16	

Unexpended balance..... \$ 1,315 61

The Permanent Funds on January 1, 1913.

	1912	1913
Life Membership Fund.....	\$18,528 46	\$18,969 25
Endowment Fund	5,374 57	5,601 79
Ebert Legacy Fund.....	3,069 79	3,166 14
Centennial Fund	2,546 22	2,639 13
Ebert Prize Fund.....	983 84	1,023 56
	\$30,502 88	\$31,406 87
		30,502 88

Net increase during fiscal year..... \$ 903 99

The Association Assets, January 1, 1913.

Cash in bank.....	\$ 7,665 18	
Bonds	10,000 00	
Available assets	\$17,665 18	
Permanent Funds	31,406 87	
Total Association assets.....		\$49,072 05
Procter Monument Fund (held in trust).....	\$ 4,855 48	
College Prize Fund (held in trust).....	32 88	
		4,888 36
Grand Total		\$53,955 41

DETAILED STATEMENT OF THE SEVERAL FUNDS.

Life Membership Fund (Established in 1870.)

Balance from old account viz:

Massachusetts state bonds.....	\$13,000 00
Boston Penny Savings Bank, January 1, 1912.....	\$5,333 46
Interest on deposit in Boston Penny Savings Bank	\$220 79
Interest on Massachusetts state bond.....	390 00
Life Membership Fee, Arthur Walbrach.....	25 00

Deposited in Boston Penny Savings Bank (Jan. 1, 1912, to Jan. 1, 1913).....	635 79	5,969 25
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Total on hand January 1, 1913..... \$18,969 25

Ebert Prize Fund (Established in 1873.)

Balance from old account.....	\$ 983 84
Interest on deposits in Boston Penny Savings Bank.....	39 72

Total on hand January 1, 1913..... \$ 1,023 56

Centennial Fund (Established in 1877.)

Balance from old account, viz:		
Massachusetts 3% registered bond.....	\$ 1,000 00	
Boston Penny Savings Bank, January 1, 1912.....	\$ 1,546 22	
Interest on bond.....	\$ 30 00	
Interest on Boston Penny Savings Bank.....	62 91	
Deposited in Boston Penny Savings Bank (Jan. 1, 1912, to Jan. 1, 1913).....	92 91	1,639 13
Total on hand January 1, 1913.....		\$ 2,639 13

Endowment Fund (Established in 1906.)

Balance from old account January 1, 1912.....	\$ 5,374 57	
Interest on deposit in Boston Penny Savings Bank.....	\$ 217 22	
Deposited in Boston Penny Savings Bank.....	10 00	227 22
Total on hand January 1, 1913.....		\$ 5,601 79

Procter Monument Fund (Established in 1904.)

Held in Trust.

Balance from old account, viz:		
Placed in International on time deposit, January 1, 1912.....	\$ 4,050 71	
Interest on time deposit at 4%, July 1, 1911, to July 1, 1912.....	\$162 02	
Interest on time deposit at 4%, July 1, 1912, to Jan. 1, 1913.....	87 25	\$249 27
Added to time deposit.....		149 90
Certificate No. 60,141.....		399 17
Deposited in International Bank Jan. 1, 1912	\$434 15	\$ 4,449 88
May 10, contribution by J. G. God- ding	\$ 10 00	
June 27, contribution by N. A. R. D. (T. H. Potts).....	100 00	
Interest on International Bank, Jan. 1 to Dec. 1, 1912.....	11 35	
Withdrawn and placed on time deposit certificate.....	121 35	\$555 50
Deposited in International Bank.....		149 90
Total on hand January 1, 1913.....		405 60
		\$ 4,855 48

College Prize Fund (Established in 1905.)

Held in Trust.

Balance from old account, January 1, 1912.....	\$ 31 62	
Interest on Boston Penny Savings Bank.....	1 26	
Total on hand, January 1, 1913.....		\$ 32 88

Hallberg Memorial Fund (Established in 1911.)

Held in Trust.

Balance from old account, January 1, 1912.....	\$ 3,262 27
Contributions	\$ 67 00
Interest on deposit, International Bank.....	37 55
	<u>104 55</u>
	\$ 3,366 82
Disbursed for Hallberg indebtedness.....	3,366 82

Ebert Legacy Fund (Established in 1909.)

St. Louis City Registered Gold Bond.....	\$ 2,000 00
Balance from old account.....	\$ 1,069 79
Interest on St. Louis City Bond.....	\$80 00
Interest on deposit, International Bank..	29 30
	<u>109 30</u>
	\$ 1,179 09
Disbursement	<u>12 95</u>

Cash on hand, January 1, 1913..... 1,166 14

Total, January 1, 1913..... \$ 3,166 14

H. M. WHELPLEY, Treasurer.

REPORT OF THE COMMITTEE ON INVESTED AND TRUST FUNDS.

The American Pharmaceutical Association at the present time has five permanent funds and two trust funds. The permanent funds at this date amount to \$32148.56 and the trust funds \$5918.80, making a total of \$38067.36.

INVESTED FUNDS.

The Life Membership Fund is \$19,520.58. Of this amount \$13,000.00 is in 3 percent Massachusetts State bonds, due January 1, 1941. The remaining \$6,520.58 is on deposit in the Boston Penny Savings Bank and at present draws 4 percent interest, but the rate may be lowered any time. We recommend that bonds to the face value of \$6,000.00 be purchased out of the money now in bank.

The Endowment Fund is \$5,713.81, and draws 4 percent interest in the Boston Penny Savings Bank. Your Committee advise the investment in bonds to the face value of \$5,500.00.

The Ebert Legacy Fund is \$3193.09, of which \$2,000.00 is in 4 percent St. Louis City gold bonds, due October 1, 1929. The sum of \$1,166.14 is in a 4 percent certificate of deposit in the International Bank of St. Louis, and \$26.95 on deposit in the same bank. We advise investment in bonds of \$1,000.00 face value.

The Centennial Fund is \$2,702.06, of which \$1,000.00 is in 3 percent Massachusetts State Bonds, due January 1, 1941, and \$1,702.06 is on deposit in the Boston Penny Savings Bank at 4 percent. The committee advise investment in bonds of the face value of \$1,500.00.

The Ebert Prize Fund is now \$1,044.02, all of which is on deposit at 4 percent in the Boston Penny Savings Bank. We recommend investment in bonds of \$1,000.00 face value.

It is understood that bonds purchased must be long term United States Gov-

ernment or State bonds, to be purchased by the treasurer with the approval of the Committee on Invested and Trust Funds.

Bonds are to be registered in the name of the American Pharmaceutical Association.

TRUST FUNDS.

The Procter Monument Fund is \$5,885.28, of which \$4,449.88 is in a 4 percent certificate of deposit in the International Bank of St. Louis. The \$1,435.40 is on deposit in the same bank.

The College Prize Fund amounts to \$33.52. We advise the transfer of this account to the Endowment Fund.



WILHELM BODEMANN, Hyde Park, Chicago,
Chairman Committee on Transportation,
1912-1913.



JOSEPH W. ENGLAND, Philadelphia,
Chairman Committee on Publication and
Secretary of the Council.

The Hallberg Memorial Fund, established February 16, 1911, amounted to \$4,603.39, which sum was expended in accordance with purpose of the fund and the account closed October, 1912.

Contributions to fund	\$4,486 49
Interest on fund	116 90
Expense of collecting	\$ 10 00
Paid accounts of C. S. N. Hallberg.....	4,530 28
Paid Mrs. Hallberg	63 11
	<hr/>
	\$4,603 39 \$4,603 39

J. H. BEAL,
H. M. WHELPLEY,
E. G. EBERLE.

A full history of the invested and trust funds is given in the American Pharmaceutical Association proceedings for 1911, page XXVIII.

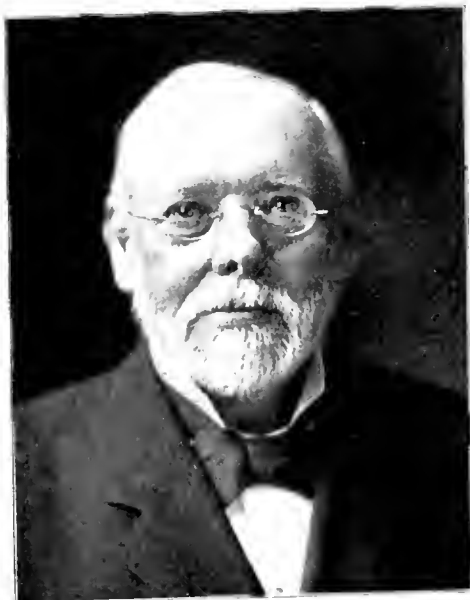
REPORT OF THE AUDITING COMMITTEE.

To the Officers and Members of the American Pharmaceutical Association:

We have examined the books of Henry M. Whelpley and James H. Beal, respectively Treasurer and General Secretary of the American Pharmaceutical Association, for the fiscal year 1912, and compared the records with the vouchers and found them correct. We have found a proper accounting for all of the funds of the Association. The cash balance to January 1, 1913, corresponds with the books of the International Bank of St. Louis, and the registered bonds and certificates of deposit in the hands of the Treasurer.

AUDITING COMMITTEE, per
OTTO F. CLAUS,
Chairman.

St. Louis, Mo., July 19, 1913.



C. LEWIS DIEHL, Louisville, Ky.,
Chairman Committee on National Formulary,
and Reporter on the Progress of
Pharmacy.

REPORT OF THE COMMITTEE ON NATIONAL FORMULARY.

C. LEWIS DIEHL, CHAIRMAN.

The work of the National Formulary Committee during the past year in conformity with the plan announced at the last annual meeting, has consisted chiefly of perfecting the manuscript for the proposed N. F. IV. The revision is in such condition at this time that publication would be possible on short notice. It is the indication now to provide simultaneous publication of the U. S. P. IX and

N. F. IV so that conflicting standards may be avoided. This will be accomplished by means of cooperation through a committee, consisting of members from both the U. S. P. and the N. F. Revision Committees.

All but sixteen of the formulas originally proposed for admission to the N. F. IV have been edited in proposed form and submitted to the committee in the Mimeographed Bulletin for approval or for correction.

Since the published list of U. S. P. VIII articles which are not to be admitted to the U. S. P. IX, the committee have voted to admit the following to the N. F. IV in practically the form now official:

Acetum Opii	Pilulae Aloes Et Ferri
Bismuthi Citras	Pilulae Aloes Et Mastiches
Ceratum Camphorae	Pilulae Aloes Et Myrrhae
Colloidium Stypticum	Pilulae Catharticae Vegetabiles
Confectio Rosae	Pilulae Laxativae Comp.
Confectio Sennae	Pulvis Acetanilidis Compositus
Emulum Olei Morhuæ Cum Hypophosphitibus	Spiritus Aetheris Compositus
Emplastrum Saponis	Sulphuris Iodium
Extractum Haematoxyli	Syrupus Ferri, Quininae Et Strychninae Phosphatum
Ferri Hydroxidum	Syrupus Krameriae
Fluidextractum Chimaphilae	Syrupus Rubi
Fluidextractum Chiratae	Tincture Aloes Et Myrrhae
Fluidextractum Conii	Tinctura Calendulae
Fluidextractum Cypripedii	Tinctura Cimicifugae
Fluidextractum Euonymi	Tinctura Gallae
Fluidextractum Eupatorii	Tinctura Ipecacuanhae et Opii
Fluidextractum Geranii	Tinctura Quillajae
Fluidextractum Lappae	Tincturae Herbarum Recentium
Fluidextractum Hamamelidis Foliorum	Tinctura Serpentariae
Fluidextractum Lupulini	Trochisci Gambir
Fluidextractum Matico	Trochisci Santonini
Fluidextractum Phytolaccae	Unguentum Hydrargyri Oxidi Rubri
Fluidextractum Quassiae	Unguentum Potassii Iodidi
Fluidextractum Quercus	Unguentum Veratrinae
Fluidextractum Rubi	Unguentum Zinci Stearatis
Fluidextractum Sanguinariae	Vinum Album
Fluidextractum Scutellariae	Vinum Antimonii
Fluidextractum Stramonii	Vinum Colchici Sem.
Liquor Antisepticus	Vinum Ferri
Mistura Ferri Composita	Vinum Ferri Amarum
Oleum Aethereum	Vinum Ipecacuanhae

The thanks of the committee are offered to the Committee on Unofficial Standards for their splendid cooperative work in preparing standards for such simple substances as are not to be official in the U. S. P. IX, but which are required in formulas of the N. F. IV.

They have prepared standards for practically all of the articles and the few remaining titles not yet reported are in the hands of referees and will soon be before the committee.

Wherever possible standards for strength and purity and suitable tests and assays will be supplied in the new book; in some instances this will be covered by descriptions only, but throughout an effort has been made to provide standard descriptions, and tests which will be practicable and adaptable to the advanced position which the book occupies.

The committee would ask that the Council take the necessary steps to provide for publication and sale of the new book so that there will be no delay when the manuscripts of the U. S. P. and N. F. are fully ready for placing in the printer's hands.

THE REPORTS ON THE PROGRESS OF PHARMACY.

C. L. DIEHL, REPORTER ON THE PROGRESS OF PHARMACY.

This is not intended to be an introductory to the Report on the Progress of Pharmacy, but a concise statement of the status of the Reports for 1912 and 1913, the one past due, the other to become due within a reasonable time after the middle of January of next year; incidentally also of causes that have led up to delay in the publication of the Report for 1911 and their influence upon the delay in publishing the one for 1912 and the possible tardiness in finishing the manuscript for that of 1913.

It will be remembered that at the meeting in Boston, 1911, it was decided to change the fiscal year of the Association so as to cover the full number of months of the calendar year—from January to December, inclusive. It was also decided that the Report on the Progress of Pharmacy should hereafter cover the entire calendar year instead of, as heretofore, from July of one year to June 30 of the next, and with this object in view, the Reporter was directed to include the abstracts covering the six months of 1911, from July 1 to December 31, in his report for that year. This meant, of course, six additional months' work, and a report covering a period of eighteen months instead of twelve months for 1911. It meant also a loss of approximately three months' time to do this work of six; hence the completion of the report would necessarily be further delayed to that extent beyond the time which had been previously conceded for the systematic arrangement, unavoidable delays, etc., which consumed usually from July to October.

Nevertheless, and notwithstanding some unavoidable delays (due to other important work for the Association), the report, properly arranged for the printer, was forwarded by express to the General Secretary on June 5, 1912, and had the manuscript gone immediately into the hands of the printer, the report might have been delivered to the members within at most three months thereafter.

As a matter of fact, by action of the Council, the publication was delayed so that the printer did not get to work on the report until late in September; at all events, the first installment of galley proofs was received by me for correction September 23, 1912, and the last installment on May 5, 1913—fifty-eight installments of galley proofs of text and perhaps five or six of index page proofs being received in all, *and in each case corrected and returned on the same day or by the next mail during that period.* And on June 21, forty-seven days thereafter, I received the bound volume.

I do not know how to account for the extraordinary delay, but am inclined to think that it was due to a combination of fortuitous conditions for which no one in particular is to blame. It is clear to my mind, however, that under normal conditions, it is quite possible to get out the report within three months after the complete text has reached the printer's hands. So far as the index is concerned, this goes hand in hand with the correction of the page proofs, and there was no delay on this score except the scarcity of type—the index being unexpectedly voluminous.

Now, regarding the Report for 1912. The manuscript for this has been ready since the end of February of this year, but has remained in my hands because of the indecision as to the manner of its publication, resulting from my plea addressed to the Council against the method adopted at Denver. The members who have read the Council Letters in the JOURNAL of the Association are doubtless familiar with my views, as well as with the views of others who differ with me and of those who support my views, and I have no argument to make now other than to say that I would consider it exceedingly unfortunate if the decision at this meeting should be in favor of the Denver proposition.

If, however, the Association shall recind its action at Denver, and decide that the report shall be issued as a separate publication, like the Report of 1911, the manuscript can be systematically arranged shortly after adjournment of the present meeting, and ready for the printer by the middle of September at the latest. If then the galley proofs reach me daily and regularly, the printing should not require more than sixty days and the binding could follow quickly, so that by February 1st the volume could be distributed to the members.

Owing to illness during the early part of this year, coupled with work on the N. F. and on the U. S. P. demanding much of my attention, the preparation of abstracts for the Report of 1913 has not progressed as favorably as I could wish. Yet, with the assistance of my collaborators I can reasonably hope to have the manuscript ready for the printer by the middle of March or early in April, and the report should then be ready for distribution on or before July 1, 1914.

Finally, it is my opinion that under normal conditions, free from the handicap of National Formulary and Pharmacopeia work, it will be quite possible to get out the volume by May 1st of each year, particularly if the collaborators will give the same assistance—for which my thanks are due them—in future reports as they have in the one for 1912, and have promised for the Report of 1913.

REPORT OF THE COMMITTEE ON LOCAL BRANCHES.

THEO. D. WETTERSTROEM, CHAIRMAN.

The Committee on Organization of Local Branches of the A. Ph. A. reports that a branch has been organized in Cincinnati, Ohio, during the past year. On February 11, 1913, the initial meeting was held at the Lloyd Library and a full list of officers was elected.

Meetings are held second Tuesday of each month.

The meetings have been very interesting and well attended. A largely increased membership is expected this coming winter.

Professor C. T. P. Fennel was elected member of Council to represent the Cincinnati Section.

Respectfully submitted,

THEO. D. WETTERSTROEM, Cincinnati, O.

GEORGE B. KAUFFMAN, Columbus, O.

D. V. WHITNEY, Kansas City, Mo.

F. R. ELDRED, Indianapolis, Ind.

CHARLES W. JOHNSON, Seattle, Wash.

REPORT OF THE COMMITTEE ON TIME AND PLACE.

The Committee on Time and Place beg to report that they have received invitations from the following cities: Atlantic City, Chicago, Cincinnati, Detroit, Grand Rapids, Merchants' Association of New York, St. Louis, and St. Paul. After careful consideration of all these invitations it believes that the best interests of the Association would be served by meeting in Detroit, the date to be decided by the Council.

THOMAS F. MAIN,

LEONARD A. SELTZER.

REPORT OF THE COMMITTEE ON NATIONAL LEGISLATION FOR
1912 AND 1913.

JOHN C. WALLACE, CHAIRMAN.

The closing session of the 62nd Congress being short, the change in the administration of the Government, the convening of the 63rd Congress in special session for the purpose of enacting tariff legislation, which has overshadowed all else, except anti-narcotic legislation, has made the labors of this committee light.

The interests of the trade in anti-narcotic legislation centered in the National Drug Trade Conference, a child of this organization. The delegates thereto will report later.

Legislation relating to the advancement of pharmacists in the government service has been in charge of a special committee, who will doubtless report to you the progress they have made.

Congress was in session at the time of the Denver convention and a complete and exhaustive report was made at that time. It was anticipated that the Richardson bill would be reported from the committee with a favorable recommendation, but we were agreeably surprised when the Sherley bill was reported out and the Richardson bill allowed to peacefully slumber for the time being.

The Sherley bill amended Section 8, which is the mis-branding section, of the Food and Drug Act of June 30, 1906, by adding thereto a third paragraph as follows: "If its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effect of such article or any of its ingredients or substances contained therein which is false and fraudulent."

Another amendment to the Act of June 30, 1906, provided for the placing on all packages of food the amount contained therein, in weight, measure, volume or count. The original amendment included drugs and medicines, but this provision was eliminated before its enactment. It also exempted packages retailing for less than six cents.

That the labors of this committee have not been arduous, was not on account of a lack of bills relating to the trade being introduced in Congress, as about fifty measures of greater or less importance have been introduced, but for the reason that the tariff and anti-narcotic legislation have been the most important. The tariff was looked after by those more directly interested, and three members of this committee were your delegates to the National Drug Trade Conference.

The tariff bill has had the right of way at all times, but, as it has not yet

been enacted, your committee have not felt it necessary to undertake to make any figures in relation thereto, as it would be almost an endless task, and those who were vitally interested were able to obtain weekly full and complete reports through the Oil, Paint and Drug Reporter.

We will, however, refer to those measures relating to the trade that have been introduced since the report of your committee at the Denver meeting, one year ago.

Comparatively few bills relating to the trade were introduced into the third session of the 62nd Congress. They are as follows:

Senate Bill No. 7503, introduced by Senator Penrose, was for the purpose of reducing postage on first-class mail to one cent per ounce.

Senate Bill No. 7722, by Senator Swanson, was to promote the efficiency of the Public Health Service, practically a technical expense account and travel pay measure.

H. R. Bill No. 27492, by Mr. Steenerson, was to prevent the manufacture, sale or transportation of misbranded articles of commerce. It was known as the "Pure Clothes Bill," but could have affected dyestuffs and many chemicals had it been enacted.

H. R. Bill No. 28277, introduced by Mr. Harrison, was to impose a tax upon the production, manufacture, sale and distribution of certain drugs and providing registration with collectors of internal revenue of dealers in or producers of certain drugs. All of these measures died with the 62nd Congress.

The following bills have been introduced in the special session of the 63rd Congress, which is still at work:

Senate Bill No. 1, introduced by Senator Owen, creating a Department of Public Health.

Senate Bill No. 117, introduced by Senator McCumber, to provide for the incorporation, control and government of Associations organized to carry on business, entering into or becoming a part of interstate commerce.

Senate Bill No. 153, introduced by Senator Bristow, to create an Industrial Commission.

Senate Bill No. 191, introduced by Senator Clapp, to prohibit unfair discrimination between different sections, communities or localities and unfair competition.

Senate Bill No. 279, introduced by Senator Smoot, to establish a Public Health Service, to transfer the Bureau of Census to and enlarge the activities of the present Public Health Service.

Senate Bill No. 667, introduced by Senator Cummins, to enlarge the powers of the interstate commerce commission.

Senate Bill No. 920, introduced by Senator Bryan, was a parcel post measure.

Senate Bill No. 929, introduced by Senator Bacon, was to promote the efficiency of the hospital corps of the United States army. This is known as the Bacon-Hughes bill.

Senate Bill No. 957, introduced by Senator Kenyon, defines and punishes lobbying.

Senate Bill No. 1028, introduced by Senator Crawford, prohibiting the issuing of revenue stamps to, and the receiving of, a special tax upon distilled and

fermented liquors, from persons designing to sell such spirits and liquors for use as a beverage in any state or territory or subdivision of any state or territory in which the sale of distilled spirits and fermented liquors for use as a beverage is prohibited.

Senate Bill No. 1034, introduced by Senator Owen, to prevent the transportation in interstate commerce of adulterated commercial feeding stuffs for live stock and poultry.

Senate Bill No. 1085, introduced by Senator Clapp, and familiarly known as the Freericks-Clapp bill, having been drawn by Mr. Frank H. Freericks, of Ohio, Secretary of the Section on Education and Legislation, and is for the purpose of providing price protection.

Senate Bill No. 2552, introduced by Senator LaFollette, to further protect trade and commerce against unlawful restraints and monopolies.

Senate Bill No. 2802, introduced by Senator Lane of Oregon, to authorize any farmer or association of farmers, fruit growers or others, to manufacture and sell denatured alcohol.

H. R. Bill No. 1, introduced by Mr. Hughes, to promote the efficiency of the hospital corps of the United States army.

H. R. Bill No. 31, introduced by Mr. Palmer, to permit the manufacture of denatured alcohol by mixing domestic and wood alcohol while in the process of distillation.

H. R. Bill No. 51, introduced by Mr. Raker, to make accessible to all the people the valuable scientific and thorough research work conducted by the United States through the establishment of a National School of Correspondence.

H. R. Bill No. 55, introduced by Mr. Lenroot, to create a tariff commission.

H. R. Bill No. 172, introduced by Mr. Martin of South Dakota, to regulate corporations engaging in interstate and foreign commerce and to create an industrial commission in the Department of Congress.

H. R. Bill No. 181, introduced by Mr. Humphrey of Mississippi, to prevent payment of special tax on retail dealers under an assumed or fictitious name.

H. R. Bills Nos. 186, 187, 188, and 189, introduced by Mr. Mott, to protect owners of trade marks, labels and similar property.

H. R. Bill No. 212, introduced by Mr. Austin, to prohibit interstate carriers from transporting products of any factory or mine in which convicts are worked.

H. R. Bill No. 1683, introduced by Mr. Steenerson, to prevent the manufacture, sale or transportation of imitated or misbranded articles of commerce.

H. R. Bill No. 1877, introduced by Mr. French, to amend Section 8 of the pure food law to compel the putting of poisons in special bottles, etc.

H. R. Bill No. 1914, introduced by Mr. Towner, to include books and pamphlets as entitled to parcel post rates.

H. R. Bill No. 1966, 1967, introduced by Mr. Harrison, are prohibitory measures relating to the use of opium for other than medicinal purposes.

H. R. Bill No. 1992, introduced by Mr. Barkley, prohibiting the issuance of permits, licenses or receipts for special tax, authorizing the sale of intoxicating liquors in prohibition territory.

H. R. Bill No. 2125, introduced by Mr. Clark, provides that no order or rule

of any department of the government of the United States shall have the force or effect of the law of the United States.

H. R. Bill No. 2919, introduced by Mr. Carey, for the establishment of uniform weights and measures.

H. R. Bill No. 2920, introduced by Mr. Carey, to promote the production of domestic industrial alcohol, increase the productive value of the land and maintain its fertile qualities through the establishment of small and scattered distilleries.

H. R. Bill No. 2954, introduced by Mr. Mann, is known as the Mann Anti-Narcotic bill.

H. R. Bill No. 3321, introduced by Mr. Underwood, is the tariff bill. This bill contains 344 pages.

H. R. Bill No. 3404, introduced by Mr. Stanley, to tax tobacco coupons, premium checks, etc.

H. R. Bill No. 3899, introduced by Mr. Carey, to amend paragraph 6, Section 7, of the Food and Drugs Act, by striking out the word "or vegetable."

H. R. Bill No. 3968, introduced by Mr. Hamil, prohibits the shipment of convict-made goods.

H. R. Bill No. 3987, introduced by Mr. Clark, to extend the franking privilege to literature published by boards of health.

H. R. Bill No. 4653, introduced by Mr. Sabath, is the old Richardson bill to amend the Food and Drugs Act.

H. R. Bill No. 4931, introduced by Mr. Dent, to prevent false advertising.

H. R. Bill No. 4981, by Mr. Lindquist, provides for the labeling, marking and tagging of all fabrics and leather goods and provides for the fumigation of the same.

H. R. No. 4982, introduced by Mr. Underhill, defining wine, imitation and carbonated wines, and for preventing adulteration and misbranding of wine.

H. R. Bill No. 5149, introduced by Mr. French, is a bill amending Section 8, of the Food and Drugs Act, in relation to the sale of poison.

H. R. Bill No. 5308, introduced by Mr. Hinebaugh, is to tax business of mail order houses and is one which will and should have the support of all the retailers.

H. R. Bill No. 5389, introduced by Mr. Rouse, is to reduce first-class postage to one cent per ounce.

H. R. Bill No. 6282, introduced by Mr. Harrison of New York, is the National Drug Trade Conference Anti-Narcotic Bill.

H. R. Bill No. 6827, introduced by Mr. Adamson, to give Public Health service jurisdiction over sanitation of common carriers.

H. R. Bill No. 7152, introduced by Mr. Doremus of Michigan, for greater Public Health Service authority.

H. R. Resolution No. 33, introduced by Mr. Henry, was to provide for a standing Committee of Public Health and National Quarantine, to consist of twenty-one members, to be elected by the House, and that all legislation, affecting Public Health and National Quarantine, shall be referred to this Committee. This resolution was defeated.

Your Committee have not deemed it necessary to enter into a discussion of all

of these measures, as there seems to be little prospect of any of them being enacted at this special session of Congress, except the Tariff and Anti-Narcotic Bills, which have already passed the House and have the approval of the Administration. However, there is little doubt but that many of these measures will be up for consideration at the regular session of Congress in December, and if there is any information which anyone desires, in relation to any particular measure, we will be very glad to take it up and discuss it at this time as we have copies of all of them.

The decisions of the Supreme Court seem to have entirely upset all plans of price protection, except that of the agency plan, adopted by the Miles Medicine Company. These decisions have, however, in a manner, cleared the way by which it is possible to have enacted, legislation, whereby the retailer will be entitled to a living profit.

There was a time not long ago when the question of price protection seemed to relate, only, to the sale of proprietary remedies, but now it is a matter that is of great interest to the retailers in all lines of business and we feel that legislation of this character should not only have the united support of the retail interests but the earnest and hearty support of all of the branches of the trade.

All of which is respectfully submitted.

JOHN C. WALLACE.

J. H. BEAL.

W. S. RICHARDSON.

REPORT OF THE COMMITTEE ON NOMINATIONS.

The Committee on Nominations was convened immediately after the adjournment of the first general session on Monday afternoon and organization was effected by the election of John C. Wallace as Chairman and Caswell A. Mayo as Secretary.

Mr. Wallace took the chair and the following nominees were named:

For President:

Caswell A. Mayo, New York.

Charles Caspari, Jr.,* Baltimore.

Otto Raubenheimer, Brooklyn.

For Second Vice President:

L. D. Havenhill, Lawrence, Kas.

W. G. Gregory, Buffalo, N. Y.

J. O. Burge, Nashville, Tenn.

For Second Vice President:

C. Herbert Packard, Boston, Mass.

E. Berger, Tampa, Fla.

E. C. Bent, Dell Rapids, South Dakota.

For Third Vice President:

Charles Gietner, St. Louis, Mo.

Burton Cassaday, Indiana.

A. B. Huested, Albany, N. Y.

*Prof. Caspari later requested that his name be withdrawn, and the vacancy was filled by the nomination of Wm. C. Anderson of Brooklyn, N. Y.

For Member of Council (three to be elected) :

Otto F. Claus, St. Louis, Mo.
 M. I. Wilbert, Washington, D. C.
 W. B. Day, Chicago, Ill.
 F. W. Nitardy, Denver, Colo.
 E. A. Ruddiman, Nashville, Tenn.
 W. E. Bingham, Tuscaloosa, Ala.
 R. H. Walker, Gonzales, Tex.
 Gus C. Kendall, Meridian, Miss.

Respectfully,

JOHN C. WALLACE, Chairman.
 CASWELL A. MAYO, Secretary.

REPORT OF THE COMMITTEE ON MEMBERSHIP.

A. H. CLARK, CHAIRMAN.

The usual efforts were made to secure new members. The various members of the committee in their respective states cooperated in securing members through the State Associations. The Nashville Branch conducted an extensive campaign over the Southern states. The Chicago Branch made a special effort in Chicago, and Professor Linton of Valparaiso, did likewise among the alumni of Valparaiso University. Those in Cincinnati, through the organization of the Cincinnati Branch, did fine work. Efforts were continued to interest the members of the various State Boards of Pharmacy, and a large majority of these men are now members.

Secretary Beal, as usual, has ably assisted the committee at all times.

Through these combined efforts three hundred and thirty-nine new members have been secured. A geographic summary of members elected since the last annual meeting and up to July 24, 1913, is appended, as is also a report from the Sub-Committee on Food and Drug Chemists.

From information furnished by the Treasurer, the complete status of our membership, August 1, 1913, is as follows:

Regular members.....	2,403
Honorary members.....	6
Total.....	2,409

In concluding this report the Chairman wishes to shatter precedent and make a recommendation to the effect that this committee, or at least the present organization of it, be done away with and that in the future its activities be directed from the Secretary's office. The appropriation heretofore applied to this committee could be well appropriated to the Secretary for clerical help, and the result would be to the advantage of the Association.

Respectfully submitted,

A. H. CLARK, Chairman.

Aug. 19, 1913.

GEOGRAPHICAL SUMMARY OF NEW MEMBERS.

Alabama	2	Nevada .....	..
Arizona .....	..	New Hampshire.....	..
Arkansas	1	New Jersey.....	2
California	4	New York.....	34
Colorado	2	North Carolina.....	1
Connecticut	2	North Dakota.....	..
District of Columbia.....	1	New Mexico.....	1
Delaware .....	..	Ohio	31
Florida	1	Oklahoma	2
Georgia	4	Oregon	2
Idaho .....	..	Pennsylvania	28
Illinois	29	Rhode Island.....	4
Indiana	9	South Carolina.....	..
Iowa	5	South Dakota.....	2
Kansas	1	Tennessee	18
Kentucky	4	Texas	9
Louisiana	2	Utah .....	..
Maine .....	..	Virginia	2
Maryland .....	..	Vermont	2
Massachusetts	7	Washington	10
Michigan	9	West Virginia	1
Minnesota .....	..	Wisconsin	4
Mississippi	3	Philippine Islands.....	16
Missouri	12	China	1
Montana .....	..	
Nebraska	8		
			277

REPORT OF SUB-COMMITTEE ON MEMBERSHIP OF FOOD AND DRUG CHEMISTS.

The Sub-Committee on Membership of Food and Drug Chemists desires to make the following report:

Immediately on receiving notice of our appointment, the members of this committee got busy and prepared a general letter to be sent out to the food and drug chemists of the country.

A letter, strongly urging the desirability of food and drug chemists associating themselves with the A. Ph. A. by becoming members, and calling attention to some of the benefits to be derived from the work of the Association, and especially of the newly formed Section on Pharmacopoeias and Formularies, was sent to 659 persons, embracing administrative officials, food chemists, drug chemists, inspectors, and municipal chemists.

The results of our efforts do not at the present time seem very encouraging, as only about five or six applications received can be traced directly to that source, still we believe there are a sufficient number of food and drug chemists in the United States that are not members of the A. Ph. A. to warrant a continuation of the work of this sub-committee.

The work of the A. Ph. A. is of too great a value to the average food and drug chemist, inspector, etc., if they can only be brought to see it, for them to remain outside, and it appears necessary for this idea to be plainly and persistently impressed upon them. The Association needs such men in her ranks, for they represent a comparatively new phase of the Association's work, one that is bound to continue to grow in importance for years to come.

Perhaps by asking such prospective members to prepare a paper for the next meeting, the acceptance of such papers being contingent upon their becoming

members, might serve to induce some of them to join the A. Ph. A. that otherwise might not be influenced to join by simply presenting the advantages of becoming a member in an abstract way.

Respectfully submitted,

LINWOOD A. BROWN,

Chairman Sub-Committee on Membership of Food and Drug Chemists.

REPORT OF THE COMMITTEE ON STANDARDS FOR UN-OFFICIAL DRUGS AND CHEMICAL PRODUCTS.

GEORGE M. BERINGER, CHAIRMAN.

The work of the Committee on Standards for Unofficial Drugs and Chemical Products during the past year has been more limited and less actual progress has been made than in the preceding years. In explanation of this statement, it is but fair to explain that the demands upon the time of a number of the members who are engaged upon the work of the revision of the United States Pharmacopœia precluded their giving the same amount of attention and time as heretofore given to the work of this Committee. Illness has compelled one of our most active members to temporarily discontinue his labors on the Committee, and death has invaded our ranks and has taken one of our active members. With the completion of the active constructive work on the Pharmacopœial Revision the members of this Committee can again divert their time from that labor to the necessities of this Committee, and it is hoped that in the near future more rapid progress in our work can be reported.

The expenses for the past year have been nominal. It is requested that an appropriation of the same amount as last year be made for the expenses of the Committee for the ensuing year. Attention of the Council is likewise directed to the necessity of filling the four vacancies occurring by expiration of the term of appointment, and likewise the vacancy on the Committee caused by the decease of Thomas P. Cook.

Since the Denver meeting, monographs covering the following topics have been presented and discussed in our correspondence:

Metaphosphoric Acid
Fresh Egg Albumen
Baptisia
Delphinium
Eucalyptus Gum
Mullein Flowers
Blackberries
Horse-nettle Berries
Agaric
Asclepias
Calcium Glycerophosphate
Dioscorea
Extract of Beef
White Ash Bark
Raspberries
Balsam Poplar Bud-
Iron Peptonate
Juglans
Cow's Milk
Manganese Peptonate
Oil of Bitter Orange Peel
Oil of Bergamot

Hens' Egg
Peptone
Pumice
Sambucus
Strontium Carbonate
Lime Juice
Trillium
Fresh Egg Yolk
Iron and Manganese Peptonate
Juniper Berries
Mace
Menyanthes
Oil of Orange Flowers
Oil of Bay
Passion Flower
Potassium Chloride
Rennin
Senecio
Fresh Apple Juice
Trifolium
Verbena

In the near future, a number of these will be tentatively adopted by votes of the Committee. It is recommended that after such adoption they be referred to the Council and upon the approval of that body that they be printed in THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

In addition to the above list of topics the following items have been accepted by referees and their reports are anticipated in the near future:

Antimony Oxide
Burgundy Pitch
Chionanthus
Elecampane
Helianthemum
Mellilot Tops
Quinine Valerate
Strychnine Valerate
Galega
Orris
Parsley Root
Xanthoxylum Berries
Rumex

Antimony Sulphide
Caramel
Corydalis
Garlic
Hydrangea
Potassium Formate
Sodium Formate
Yeast, Compressed
Nepeta
Pimpinella Root
White Sandal Wood
Zedoary
Thyme

It is further recommended that as monographs for these articles are reported upon and tentatively adopted by the Committee, after discussion, that they likewise be reported to the Council for approval and publication. The object of this recommendation is to avoid unnecessary delay in the completion of our work and in the publication of the National Formulary.

As it is contemplated to include in the National Formulary Revision a number of formulas and drugs dismissed in the U. S. P. Revision, it will likewise be necessary either for this Committee or the Committee on National Formulary to give some attention to the standards for these drugs before they are admitted into the revised National Formulary, and such approved monographs should be reported as part of the work of this Committee and printed in the JOURNAL.

Respectfully submitted,

W. A. PUCKNER,
M. I. WILBERT,
OTTO RAUBENHEIMER,
H. H. RUSBY,
L. D. HAVENHILL,

GEORGE M. BERINGER, Chairman,
J. A. KOCH,
B. L. MURRAY,
FRANK R. ELDRED,
CHAS. E. VANDERKLEED,
HENRY KRAEMER.

REPORT OF THE COMMITTEE ON DRUG REFORM.

L. E. SAYRE, CHAIRMAN.

It will be seen, from former reports of this committee, that its efforts have been directed mainly to the cause of standardization, which term, in its broadest application touches acutely not only pharmacists and physicians but all who assume any responsibility in the practice of making, and dispensing, of medicine. Your chairman was honored by an invitation to speak on the work of this committee at the last meeting of the Kansas Medical Association. He said to the members of this association, what will bear frequent repetition: "If there are

any avenues left open for the exploitation of sub-standard material there are those ever ready to enter them and to supply this material at all prices and in any quantity. It is unnecessary to repeat that the reputable houses are too upright and honorable to stoop to the practice of ever carelessly standardizing their products or that they would yield to the temptation of supplying two grades—one for localities and places not frequented by official inspectors and the other for other localities frequented by these. It is also needless to repeat that reputable physicians in every possible way at their command secure for themselves remedial agents which would creditably pass inspection and meet the requirements of the standard. Nevertheless, the theory is tenable: any loophole, however small, for the introduction of inferior articles, furnishes an incentive for an evasion of the law. Such incentive will invite those, always ready, to take advantage of it. Experience has shown this to be true."

During the past year an effort has been made to further the work outlined in former reports, and while nothing startling has been accomplished, the attainment of one result is a source of some encouragement. Working in connection with the Legislative Committee of the Kansas Pharmaceutical Association, reformative legislation has been secured in that state. This was bitterly opposed by certain members of the medical fraternity who misconstrued its purpose, but in spite of their antagonism, a broader application of the food and drugs law was secured. The law enacted requires that all who dispense drugs, whether from private stock of physicians, or from other supply stocks, shall be subject to the same inspection as the druggist. In other words: Drugs and medicines now dispensed by physicians or by any others from private stocks shall be subject to inspection as provided in the Kansas Food and Drugs Law, and such drugs and medicines shall comply with said law. In this respect the law previously enacted (or provision for its administration) was weak and inefficient. In order to secure this little bit of legislation some missionary work was necessary among physicians. In this work we desire to acknowledge the help of those physicians who believed that every dispenser of medicine should be held responsible for those drugs and chemicals dispensed by him.

We desire also to acknowledge the help of the Legislative Committee above referred to, and that of the president of the Association, Mr. C. C. Reed. Without such combined efforts and efficient aid the proposed legislation would have been defeated. The future usefulness—greater usefulness—of this committee on Drug Reform—seems to indicate, from past experience, that a close articulation between it and all of the various national and state legislative committees, is not only essential but necessary. To accomplish this satisfactorily would require perhaps some slight expense.

This report would be incomplete did it not refer to two well-marked sources of opposition to drug reform. This was made evident when two sections of the bill, above referred to were considered. One of these sections contained a provision for the better regulation of the itinerant vender of patent medicines.

Chairman Eckstrand, referring to the antagonism of the patent medicine interests, says: "The committee became thoroughly convinced that the patent

medicine influence thoroughly dominated both houses"—hence the defeat of this section. Another section of the bill provided that: Physicians who furnished medicines from private stock, should, except in cases of emergency, write and file a prescription for the same. Said prescription should be subject to inspection by proper authority. Chairman Eckstrand reports that this section was defeated by the active interest of a large manufacturing house "that made malicious, unwarranted and yet plausible misstatements as to the intent and purpose of the bill."

The future work of this committee if continued on the lines indicated by this and previous reports; if the work be extended into every state, it would doubtless yield results worthy of the approval of this Association. There are many other lines calling for activity. One especially which relates to the nostrum and fake remedy traffic. This is alarmingly on the increase. It is irritating beyond measure and of course militating against pharmacy. The professional pharmacist is constantly striving against these so-called remedies and yet he is seemingly forced by circumstances to be their distributing agent. An act has recently been passed in Kansas for the protection of lower animals, as it were. The act relates to the regulation of the sale of medicines and nostrums for the treatment of diseases of stock. It includes stock food tonics, condition powders, proprietary medicines, etc. Each ingredient, whether it be active or a diluent is required to be registered. Should we not be equally careful for the protection of higher (human) animals? Both medicine and pharmacy should take hold of this subject with courageous hands and by degrees control this traffic—it would be an important extension and broadening of the work of standardization which this committee will probably always keep in the foreground.

It is gratifying that our Association is contemplating a scheme for the establishment of a laboratory to determine, among other things, whether it is possible to draw a distinct line of demarcation between legitimate and illegitimate remedies.† Such a laboratory and such work would do much to advance the interests of the pharmaceutical vocation, and would doubtless yield tangible results in the direction of drug reform.

NOTE—Unfortunately this hastily prepared report could not be submitted to other members of the committee for their approval in time for the annual meeting. The chairman wishes to express his thanks for their valuable advice and assistance during the year.

ALBERT SCHNEIDER,
E. N. GATHERCOAL,
L. E. SAYRE,

Committee.

* Chairman Eckstrand's report is published in pamphlet form.

† See August, 1912, issue of the JOURNAL OF THE A. PH. A.

REPORT OF THE DELEGATES TO THE 1912 CONVENTION OF THE
NATIONAL FEDERATION OF RETAIL MERCHANTS.

FRANK H. FREERICKS, CHAIRMAN.

The delegates appointed to attend said convention were Frank H. Freericks and Drs. J. H. Beal and H. M. Whelpley. The convention was attended by F. H. Freericks and Dr. Whelpley, at St. Louis in October, 1912.

As its name would indicate, the Federation is exclusively by and for retail merchants. The St. Louis convention was largely attended, including representatives from almost every line of retail business. The various sessions of the convention were devoted to discussion and consideration of problems which confront in particular the retail trade in all lines throughout the United States. Subjects under consideration and discussion included: Need for Truthful and Honest Advertising; Necessary Changes in the Sherman Act, and Legislation Supplementing the Same; Parcel Post and Its Likely Effect Upon Retail Merchants in Smaller Towns and Cities, and various other subjects of special interest to the retail trade.

Your delegates to said convention found the efforts and objects of the Federation of Retail Merchants to be commendable, and worthy of support, in that when it seeks to better the conditions of retail merchants generally, this of necessity includes an effort to improve the condition of those who are engaged in the retail drug business.

We therefore recommend, that this Association continue its interest in the Federation of Retail Merchants in such manner and under such limitation as may be necessary under our form of organization, and subject to the directions of Council.

REPORT OF COMMITTEE ON PROCTER MEMORIAL.

W. F. HANCOCK, CHAIRMAN.

The Committee on the William Procter, Jr., Monument Fund, respectfully reports that they have completed the collection of money necessary for the erection of the monument in accordance with the preamble and resolutions adopted by this Association at its annual meeting in Kansas City in 1904. Sufficient has been collected and is in the treasury of the Association to assure the erection of the monument in the Smithsonian Grounds at Washington, D. C., by the time of the Centennial of the Birth of the Father of American Pharmacy, in 1917.

The time has now come to take preliminary steps and make arrangements for space and for the erection of the monument.

A sculptor of repute and responsibility has submitted to your committee a model with the price for casting and for erecting a monument that will conform to that of the Dr. Gross monument and which is within the means provided by

the subscribers. A committee of seven should be appointed and authorized at this meeting to organize and arrange the details, because two or three years will be required for its completion.

It is very important to have it ready for dedication in 1917 and we would recommend that this Association shall meet in Washington, D. C., at the time appointed for its dedication and then transfer it to the custody of the Government. This should be an occasion of great interest to the pharmacists and druggists of America, and especially to the members of this Association.

The dedication of this monument in Washington on the centennial anniversary of the birth of William Procter, Jr., would not only proclaim the lasting worth of the Father of American Pharmacy, but by linking his name with that of Dr. Benjamin Rush and that of Dr. Samuel D. Gross will preserve in history the true relations that should bind together the three branches of the healing art in America—Therapeutics, Surgery, and Pharmacy.

It will also call the attention of Congress and the people of this country to the dignity of our profession and its importance in the economic welfare and the health of the nation, at a time when constructive legislation for pharmacy is so necessary.

In closing the chairman wishes to compliment the efforts of two members of this committee—Dr. A. R. L. Dohme and J. E. Hancock—for their valuable assistance during the past year to complete the fund. Indeed the interest of the committee from its inception in this proposed tribute to the Father of American Pharmacy has been a pleasing feature of our work.

Respectfully submitted,

J. F. HANCOCK, Chairman.

HENRY KRAEMER,
CASWELL A. MAYO,
E. G. EBERLE.

CHAS. CASPARI, JR.,
CLEMENT B. LOWE,
THOS. F. MAIN.

REPORT OF COMMITTEE ON PHARMACEUTICAL NOMENCLATURE

CASWELL A. MAYO, CHAIRMAN.

The interest in the subject of uniformity of pharmaceutical nomenclature has grown steadily since this committee was first appointed at the Boston meeting, as a result of a paper on the subject presented by its Chairman. While the reports of this committee have not dwelt particularly on the question of pharmacopoeial nomenclature, that phase of the subject has been taken up by M. I. Wilbert, who contributed a paper on the subject to the *American Druggist* for June, 1913. Mr. Wilbert has also prepared a paper on this subject for this meeting, which brings out the fact that comparatively slight modifications of existing pharmacopoeial nomenclature would bring about approximate uniformity and would at least prevent any possibility of serious error so far as chemicals are concerned. A more difficult problem is presented in the case of synthetic additions to the materia medica. Additions to our materia medica are frequently

made by manufacturers who can only make a profit on their labors by means of either patents or trade marks. The use of coined names offers in most countries the most direct and effective means for protection of proprietary rights. As a result we have a constantly growing list of names, many of which have similarity in sound or spelling to the names of totally dissimilar preparations, so different in potency that confusion is apt to, and frequently does, produce untoward results.

In view of the importance of uniformity in pharmaceutical nomenclature, your committee recommended that the delegates from this Association to the approaching meeting of the Eleventh International Pharmaceutical Congress at The Hague, be instructed to present to that Congress a proposal for the establishment of an International Commission on Pharmaceutical Nomenclature to take into consideration the nomenclature of all the drugs, medicines and preparations dealt in by the pharmacists, whether pharmacopoeial or non-pharmacopoeial, and to carry on an active propaganda looking toward the unification of pharmaceutical nomenclature throughout the world, with a particular view to the prevention of the adoption of names which through their similarity may have a tendency to cause errors in dispensing.

REPORT OF THE NATIONAL SYLLABUS COMMITTEE.

WILLIS G. GREGORY, CHAIRMAN.

This committee respectfully reports that the work of revising the National Pharmaceutical Syllabus has gone steadily forward during the year.

December 27, 1912, a meeting of the committee was held at Pittsburgh, with thirteen members of the committee present, and three proxies, making sixteen in all. Much progress was made at this meeting, agreement being reached on many unsettled questions.

Here at Nashville two meetings of the committee have already been held, and we can report that Chapter I, preface; Chapter II, introductory, preliminary and explanatory notes; Chapter III, *Materia Medica*, and Chapter IV, Chemistry, have been approved by this committee, and are in page proof ready for final editing.

Chapter V, Pharmacy; Chapter VI, reference works, and Chapter VII, textbooks and pharmaceutical periodicals, are in the hands of the committee in page proof and soon will be ready for final editing.

Chapter VIII, the index, will be prepared as soon as the other chapters reach their final form.

It is confidently believed that the second edition can be ready for distribution before the end of the present calendar year.

This Association is requested to vote its annual contribution to the expense of the committee.

REPORT OF THE COMMITTEE ON DRUG MARKET.

EDGAR L. PATCH, CHAIRMAN.

Examination of the records available would indicate the general improvement in conditions that should be expected from continued working of pure food and drug legislation.

The most interesting development of the past year has been the finding of many tablets and tablet triturates different from their labeled strength. In the case of non-volatile ingredients this would seem to indicate carelessness on the part of the tablet workman; in other cases it may be due to change in the tablet since it was made and bottled. In some instances it may be due to faulty sampling. If pills or tablets are purchased of a retail pharmacist in small lots, it might chance that variable results would be obtained. If an original package of 100 is purchased, the entire 100 weighed and the assay made on an aliquot part, such assay should be considered to fairly represent the lot bottled. Many substances are called for in tablet formulas that are subject to change in quantity by oxidation or evaporation.

Phosphorus can be kept unchanged in a coated soft pill mass, but soon oxidizes in a tablet mass, so that with the full quantity carefully put into the tablet no test for free phosphorous can be obtained soon after being made.

In some formulas Creosote and Carbolic Acid can be so combined as to be fairly permanent. In others it is impossible to prevent their volatilizing.

The Essential Oils and Menthol gradually disappear. While such substances as Paraldehyde and Chloroform can be emulsified and placed in a cut lozenge in noticeable proportions, they cannot be retained in compressed tablets or lozenges and formulas calling for 5 minims of Paraldehyde cannot be expected to contain the product even if put into the original powder before compression.

Criticism has been made of the use of Talc as a lubricator in tablet work, but either small percentages of Talc, of Boric Acid or of Paraffin must be employed to run the tablets. The Talc is insoluble and inert and in the small proportion used should not be considered objectionable. The Boric Acid used where tablets are designed for clear solution, is in such small proportion as to have little therapeutic action.

With the present custom of giving tablespoonful doses of paraffin oils three times daily as a mild laxative it is hard to conceive of any harm to come from the small quantity used in tablet lubrication. With the most elaborate system of checking formulas and tablet weights it may happen that the individual machine man may be inattentive to his duties without the knowledge of his foreman or employer, but there should not be an extreme variation of more than 10 percent above or below the labeled strength from any other cause.

The following table gives machine record and average weight and assay of a few tablets taken at random from stock:

	Should weigh	Average of 100	Assay
Ammon. Chloride 5 grains.....	0.325 G.	0.334	5.08 grains.
Bismuth Subnitrate 5 grains.....	0.397 G.	0.387	4.60 "
Salol 5 grains.....	0.435 G.	0.400	4.61 "
Strychnine Sulphate 1-30 gr.....	0.093 G.	0.0926	1-30 (30 gave 1.027 grains)
Codeine Sulphate 1-4 gr.....	0.098 G.	0.0994	1-4 (each 0.253 grains)
Sodium Bromide 5 grains.....	0.325 G.	0.3349	5.08 "
Terpin Hydrate 2 1-2 grains			
Heroin 1-24 grain.....	0.178 G.	0.1763	1-28 "
Quinine Sulphate 2 gr.....	0.152 G.	0.1524	(no correction for process) 1.952 grains. (7 H ₂ O) 1.992 (8 H ₂ O)
Soda Mints			
(3.87 grains Sod. Bic.).....	0.286 G.	0.283	3.9 Sod. Bic.
Sodium Bicarb. 5 grains.....	0.357 G.	0.360	5.005 grains.
Iron, Arsen. and Strych. No. 1.....	0.137 G.	0.138	1-60 (60 gave 0.988 grains)
(Strych. 1-60 gr.)			
Migraine No. 2.....	0.250 G.	0.255	2.71 grs. Acetan.
		Caffeine and Camph. Mon.	0.25 "Citric Ac
	Should give 2.75 grains and	0.25 grains.	
Nitroglycerin U. S. 1-50 gr.....	0.027 G.	0.027	99.73% (Lot 6 years old 75.3%)

Since the standard has been lowered on Ipecac Root the quality has been lowered and the price remains at the same relative level. Ten years ago lots assayed from 2.66 percent to 2.9 percent. The proportion of stem has gradually increased, lowering the assay. Average assay in 1911, 2.2 percent; 1913, 1.96 percent.

Aspirin tablets have had considerable attention. It has been stated by some authorities that nearly half of those sold are made from Acetyl Salicylic Acid other than the legal Aspirin. With 5 grain tablets offered in a large way from Acetyl Salicylic Acid at a cost of 65 cents per M., while from Aspirin the cost must be five or six times as great, there is a strong incentive to substitute. W. C. Alpers found tablets weighing between 5 and 6 grains to contain but 2 grains or less of Aspirin.

In this connection it is well to call attention to the unreliable character of some testimony as to the activity of preparations. A single bottle of tablets from a lot of several hundred thousand may be complained of, while assay shows the contents of the bottle to be true to label.

Dr. Rusby reports "All things considered, the year has shown a further improvement in the quality of drugs. Belladonna root and leaf, scopolia, gentian, dandelion, sumbul, convallaria, colchicum root and seed, barberry bark of root and stem, quebracho, both varieties of chamomile, pulsatilla, scoparius, artemisia, absinthium, coca, cola, stramonium, nux vomica, guaiac and guarana, beside some others to be mentioned later, have been almost unexceptionally good so far as my experience has gone and so far as relates to importations. Brokers' samples of inferior goods offered in the hope of finding a buyer, are not here considered.

On the other hand there is much to be desired as to the genuineness and quality

of Russian ergot and Russian anise, cut althaea, inula, pareira brava, cramp bark, cascarilla, santonica, cannabis, marjoram, horehound, matico and buchu."

Acacia. Used for many technical purposes, as by lithographers, bookbinders, textile manufacturers, in mucilage, etc., as well as in medicine, many grades are imported. Six grades under the designation of "Gum Arabic"—firsts, seconds, thirds, fourths, sorts white, sorts amber, one as "crude gum," one as "Gum Acacia" and the ninth as "Insoluble Gum." All but the higher grades must be marked "Not U. S. P. for Technical Purposes Only." Only the highest grades are suitable for making emulsions. Acacia may have some food value, but the chief purpose in its use for the manufacturer of confections is its adhesive properties and as a filler.—L. F. KEBLER.

Acid Tartaric. Imported product liable to contain lead.—DRUG LAB.

Very dirty—unfit for use.—E. L. PATCH.

Aconite Root. A wide range of alkaloidal contents is found. Six lots assayed from 0.31 to 0.40. One lot wormy, decayed and spongy, gave by assay of carefully garbled samples only 0.068 and 0.088 percent. Eighteen bales were Japanese Aconite not recognized in the Pharmacopoeia. One lot of spurious gave 0.51 alkaloid. One lot, not *A. napellus*, gave 0.27 percent alkaloid, 3.75 percent ash. Thirty-three lots, some of which consisted of sixty bales, gave alkaloidal contents of 0.41 percent to 0.99 percent. Those examined for ash gave 3.8 percent to 5.25 percent. The lot assaying 0.99 percent was very small root, contained 30 percent of stem and 10.4 percent of sand and foreign material. It did not answer U. S. P. description for dimensions or percent of stem, but assayed the highest of any of the samples reported. Another sample containing an excess of stem assayed 0.07 percent. In many cases the course pursued was to admit the goods on guarantee that correct assay would be attached to bales.—L. F. KEBLER.

0.37 percent, 0.45 percent, 0.486 percent.—E. L. PATCH.

Agaric White. Was of good quality—1.5 percent ash.—L. F. KEBLER.

Cape Aloes. Four lots were of good quality.—L. F. KEBLER.

Aloes. The practice of importing Moka or Stinking Aloes under the name of Socotrine, so common last year, has been discontinued.—H. H. RUSBY. One lot (aloes in bulk) contained 16.4 percent moisture, 0.1 percent ash and was almost completely soluble in water. It contained an excessive amount of gummy matter, did not comply with U. S. P. and was rejected.

	Moisture	Water insol.	Ash
Zanzibar in skins.....	7.47%	41.03%	1.98%
Aloes in monkey skins.....	7.11%	19.1%	2.03%
Four Samples Aloes.....	9.6 to 23.8%	44.1 to 59.2%	
East India Aloes.....	17.92%	34.05%	1.8% was a thick viscous paste.

Aloes Socotrine. Fifteen lots examined and passed gave:

Moisture	Ash	Insol. in water	Insol. in Alc.
4.85% to 43.85%	1.2% to 5.67%	13.7% to 46.45%	(2) 11.8% to 16%

One lot was Curacao Aloes; one lot Mocha Aloes.—L. F. KEBLER.

Althaea. Most of this drug now appears cut into fine pieces or granules. This often looks beautifully white, but on scrutiny it is found coated with lime.—H. H. RUSBY.

One lot consisted of peelings of the root and did not agree with U. S. P. requirements. Was released on an affidavit that goods would not be employed in the manufacture of any food or drug commodity.—L. F. KEBLER.

Alum. Contains enough iron in most cases to discolor when mixed with substances containing tannin, salicylates, etc.—W. L. SCOVILLE.

American Hemp. 1.8 percent only of ether soluble resin.—E. L. PATCH.

Eckler and Miller do not find carefully selected samples to equal true Indian Hemp. The best tested 65 percent, others 50 percent and less, some extremely low. They do not think it should be made official.—AM. JOUR. PHARM.

Ammoniac Gum. One lot, acid number, 83; saponification number, 210; total Salicylic Acid, 4.97.—L. F. KEBLER.

Angelica Root. One sample of genuine gave: ash, 6 percent; loss at 110° C., 6.7 percent. One lot was prepared with glucose. One lot was prepared with sugar and glucose. One lot contained few mouldy pieces.—L. F. KEBLER.

Anise Seed. Fine gravel and pellets of earth are often found in anise, especially in the Russian variety. This product is mostly very impure indeed, whereas when pure it is a very sweet and good article. Not only does it contain large percentages of stones and earth, but there is usually a large quantity of coriander and many small black weed seeds. Practically all of it has to be cleaned before it can be admitted and even then it is none too good.—H. H. RUSBY.

Thirteen samples were of good quality, ash contents 6 to 6.8 percent. Four of doubtful quality gave ash contents 8.71 percent to 10.3 percent. Two contained 10 to 14 percent of foreign material. One gave 20.39 percent ash, and another 25.3 percent ash. The latter contained broken stone sifted to agree with the size of anise and these two lots were so grossly adulterated that they were refused entry. One lot seemed to have much foreign seed. Examination gave 92.17 percent pure seed, inert matter 4.78 percent, foreign seeds 3.05 percent. One sample contained 8.7 percent coriander seed. Another 12 percent of stems, sticks, coriander and other foreign seeds. One lot consisted of 84.7 percent anise seed, 8.6 percent foreign seed, 3 percent stems, 1.6 percent gravel, 2 percent other foreign material. A lot of 50 bales was damaged either by excessive heat, water or steam and had lost most of its activity. It was exported. One lot labeled Anise Seed was Fennel Seed. One consignment was 71.6 percent Anise Seed, 15.6 percent foreign seeds, mostly coriander, 12.8 percent stems, gravel and immature seeds, ash 11.5 percent. Four lots gave 9.76 to 21.4 percent ash. A portion of these was sifted and picked over and a satisfactory product resulted.—L. F. KEBLER.

Arnica Flowers. Two lots of good quality gave 7.05 percent ash. One sample was wholly spurious, being a species of *Inula*. Two lots were inferior and deteriorated, being seriously damaged by insects. Were unfit for medicinal purposes.—L. F. KEBLER.

Arnica Root. One sample was wholly spurious and had no relation to *Arnica* root. Another was grossly adulterated with spurious root and required garbling before it could be admitted.—L. F. KEBLER.

A thick and light colored, woody, much-branched rhizome or root has been mixed with this drug. It is at once noticed when seen, but bunches of Arnica are matted together with the spurious article in the center where it escapes notice.—H. H. RUSBY.

Asafoetida. Examination of some hundreds of samples gave alcohol soluble matter ranging from 3.9 percent to 81.27 percent, and ash from 2.2 percent to 75.4 percent. Lots have been allowed entry containing 35 percent of alcohol soluble material, with the understanding that the actual quality should be marked upon the cases and an equivalent amount used to give standard strength to all preparations. Several importers asked for admission of defective goods on the plea that they were to be worn about the necks of the colored people in the South to ward off disease. All lots containing less than 35 percent alcohol soluble matter were exported. Several lots have contained foreign resins determined by color reaction tests. Most of the foreign resin is galbanum, but one shipment contained ammoniac tears.—L. F. KEBLER.

The standards for this article are still most unsettled. Mr. Harrison, the English chemist, has produced figures to show that Dr. H. A. Seil's use of the lead number as a test is useless. He showed such a difference (as I now recall) as 15 to 180 in the lead number of different portions of *Asafoetida*. Mr. Harrison's claim is preposterous on its face. Such a difference could not exist in the same substance. The two portions must have represented entirely distinct substances. In asserting that two samples of *Asafoetida* show this difference he assumes that both are *Asafoetida* and since this is the very question at issue, he begs the question. Of course, if we are to start out by admitting that everything shipped in *Asafoetida* boxes is *Asafoetida*, then there need be no lead number at all, for portions of these contents consist of stones. There is the utmost need for some careful study of the origin and identity of *Asafoetida* et al. at the point of production. Meantime, we shall all be kept guessing, and one man's guess, under the circumstances, is about as good as another's. —H. H. RUSBY.

Po.	Ash	Alc. Ext.	Po.	Ash	Alc. Ext.
"	25%	52.5	"	26%	50
"	10%	67.5	"	20%	57
"	30%	43	"	12.5%	64
"	13%	64			

—E. L. PATCH.

Asparagus Seed. Two lots were offered as asparagus seed which were Corn Spurry, *Spergula arvensis*.—L. F. KEBLER.

Aspirin. Nearly 2,000,000 ounces of counterfeit Aspirin sold in U. S. annually. Even put up in exact imitation packages with same guarantee number. — H. A. METZ.

Tablets weighing 5 to 6 grains contained but 2 grains of Aspirin. W. C. ALPERS.

Apiol. Adulterated with parsley oil. Green color is objectionable. Yellow color to be preferred.—LUTZ & OUDIN.

Bay Leaves. Ninety-two bales out of 184 were damaged by water and fire. Goods were destroyed.—L. F. KEBLER.

Beef Extract.

	Moisture	Na. Cl.	Proteid		Moisture	Na. Cl.	Proteid
1	18	19.4	30.99	5	20	9.02	47.6
2	18	22	36.56	6	20	9.89	51.87
3	18	8.49	42.38	7	20	9	47.69
4	18	14.	33.				

—E. L. PATCU.

Belladonna Leaves. Are subject to adulteration with *Scopola* leaves, poke leaves, chesnut leaves, oak leaves, belladonna stems and fruit. Some lots genuine but of physically poor appearance assayed 0.47 percent to 0.735 percent of mydriatic alkaloids, while lots of good physical appearance assayed but 0.19 percent to 0.21 percent. One lot containing 17.4 percent belladonna leaves, 33.3 percent *scopola* leaves, 8.2 percent stems and 41 percent of dirt and unsorted material, assayed 0.255 percent. Another 78 percent belladonna leaves, 7 percent poke leaves, 11 percent stems, 4 percent unidentified leaves, assayed 0.189 percent. Such lots were not considered proper for use as belladonna. Two lots largely of chestnut leaves, assayed 0.05 to 0.14 percent. One lot had 10 percent *scopola* leaves and 23 percent stem. One lot was belladonna fruit and twigs with fragments of leaves. Material imported as belladonna herb on account of the amount of stemmy material present often assayed well, ranging from 0.30 to 0.62 percent. Some lots packed when damp were quite mouldy, assayed from 0.072 percent to 0.31 percent. One lot had 24.6 percent of stem. The mixture assayed 0.20 percent, the stems 0.172 percent. Over 150 lots assayed from 0.168 to 0.733 percent.

	Alkaloid	Ash	Moisture at 110° C.
33 lots assayed.....	0.24 to 0.717%	5.93 to 21%	4.4 to 16.21%

—J. F. KEBLER.

Belladonna Root. Examination of over 125 lots from four to over 100 bales each, demonstrates that it is possible to obtain good root of the U. S. P. standard, but some good looking lots were deficient in alkaloidal strength. Assays ran from 0.149 to 0.75, but the greater number were standard or somewhat higher. Fifty lots assayed: Alkaloid 0.384 to 0.667; ash 4.52 to 8.50; moisture at 110° C. 1.5 percent to 10 percent. Quite a number of lots were adulterated with poke and *scopola*. One lot, nearly all poke root, assayed 0.02. Six lots badly adulterated with poke root, gave 0.15 to 0.422 alkaloid, 7.12 percent to 9.10 percent ash, 1.5 percent to 7.06 moisture at 110° C. Twelve bales containing from 13.5 to 27 percent crown root, assayed from 0.54 to 0.62 alkaloid. Another lot of 29 bales had 25 deficient in alkaloid, assaying from 0.25 to 0.44 percent. One lot was all *scopola*. One lot of 119 bales had 15 percent *scopola* in middle of bales, evidently added as an intentional adulterant. It is not practical to attempt to remove the adulterants, *scopola* and poke root, from *Belladonna* root.—L. F. KEBLER.

Benzoin. Is imported under the names Benzoin, Benjamin, Sumatra, Siam Benzoin, Benzol. Four lots of good quality gave 93.72 percent to 100 percent soluble in alcohol; ask 0.07 to 2.25; Benzoic Acid 11.99 to 15.4 percent. One lot was artificial Benzoin, differing materially from U. S. P. test. It was to be

used in the manufacture of shellac. Two lots offered as Refined Benzoin were purely artificial, tests showing presence of rosin and benzoic acid yielding chlorinated products. One shipment marked Pallenbang Gum Benjamin was an inferior product, not U. S. P. Alc. Soluble 84.9 percent, ash 1.5, Benzoic Acid 13.8 percent. One lot from Germany below standard and exported gave, alcohol soluble 72.7 percent, ash 3.06 percent. One lot contained 25 percent of bark fragments, ash 1.9 percent. The Pharmacopoeia states that "Benzoin is almost wholly soluble in five parts of warm alcohol." This is not very definite, and experience has shown that samples varying in quality from fair to good do not contain more than 15 percent of material insoluble in alcohol, and this was adopted as a standard. About 100 lots gave, alcohol soluble 64.3 percent to 99.5 percent, ash 0.09 to 2.15, Benzoic Acid 7.8 percent to 34.53 percent. The lot assaying 34.53 percent Benzoic Acid gave 1.04 ash and 86 to 88 percent alcohol soluble. Several lots contained foreign resins and an excess of alcohol insoluble material.

—L. F. KEBLER.

Ranged from 55.8 percent to 86.5 percent alcohol soluble.—W. L. SEVILLE.

Black Hellebore Root.

Ash	9.4	Ext.	30.6	Ash	7.6	Ext.	31.4
"	9.	"	24.2	"	10.	"	25.4
"	9.	"	24	"	9.	"	25
"	10.	"	24				

—E. L. PATCH.

Bryony Root. One lot of inferior quality gave 5.4 percent ash, moisture 12.5 percent at 110° C. One lot good quality 2.8 percent ash.—L. F. KEBLER.

Buchu. Both short and long varieties are scarce and high. The mixing of finely chopped stems has about ceased, but lots of spurious leaves have been occasionally offered. This is a very puzzling drug. The genuine species seem to vary widely in different localities so that it is not always easy to determine whether we have something different or not.—H. H. RUSBY.

Over 100 lots gave from 4.74 to 35.8 percent of stems. Several lots of good quality gave from 3.8 percent to 6.63 percent of stems. In view of all conditions it was decided that an acceptable drug "should not contain an excess of 10 percent of stems, foreign material or worthless leaves (meaning leaves containing virtually no active principles.)" The Pharmacopoeia makes no provision for stems, but no importations are offered free from stems. Two lots of *Barosma crenulata*, a variety rejected by the 1890 U. S. P. as of inferior quality, were offered. Three lots unfit for medicinal use contained a large amount of spurious buchu leaves. One lot labeled long buchu was wholly spurious. Two lots of long buchu had 45.5 percent stems.—L. F. KEBLER.

Burdock Root. Mostly of good quality. Ash 4.19 percent to 12.6 percent. One lot contained some mouldy pieces.—L. F. KEBLER.

Calabar Bean. Five lots satisfactory, 0.144, 0.18, 0.14, 0.305, 0.142. One lot deficient, 0.085 ether soluble.—L. F. KEBLER.

Calamus. Unpeeled calamus, which alone should be used in medicine, is much more frequently seen than heretofore, and the quality is always good.—H. H. RUSBY.

Calendula. Eight lots genuine and satisfactory in quality. One lot imported under name of "Feminella, extra fine," consisted of colored florets of *Calendula*

officinalis. The U. S. P. does not allow color. Ash 9.6 percent. Ash in satisfactory lots 7.6 percent to 8.5 percent. One shipment heavily adulterated with calcium sulphate and artificially colored. Ash 49.61 percent to 54.81 percent. One lot imported under name of "Calendula Sabe" contained .67 percent alcohol by weight. Calendula flowers, under the name of Feminella, have been prepared and imported into the U. S. for the specific purpose of adulterating Saffron.—L. F. KEBLER.

Canadian Balsam. One lot consisted of a dark colored product having the odor of Storax and contained a small amount of volatile material. Does not comply with the requirements of the U. S. P.—L. F. KEBLER.

Canella Bark. One lot, imported under the name Canella Alba Bark, was found to be genuine and good. Ash 7.76 percent, moisture 7.13 percent, fixed oil 6.14 percent, petroleum ether soluble 7.99 percent. One lot, imported under the name of Canella Bark Siftings, was highly contaminated and not fit for medicinal use. It was designed for incense.—L. F. KEBLER.

Cannabis Indica. This is almost always imported under the name of "Gauza." Very little of the efficient old Cannabis Indica is now seen, nearly all being African or "French" Guaza, probably nearly all grown in Madagascar. It exhibits hardly any resin, is bright green, and dry, light, and consists largely, sometimes to the extent of about half, of fertilized akenes. In spite of all arguments, we do not believe this to be nearly as efficient as the genuine, and recently some good experimenters have expressed this view.—H. H. RUSBY.

Two-thirds of lots examined were unsatisfactory. Some had been heated in curing and had a musty odor. Several lots were not grown in India. Some lots imported as French Cannabis came from Madagascar. Some lots contained 15 percent of seeds, some of which were mature enough to germinate. One lot imported as Madagascar Cannabis coincided more nearly with inert fibre hemp than the true Cannabis Indica. It contained seeds and was without medicinal properties. Ash in two lots was 14.8 percent and 15.34 percent. The U. S. P. states, "In the powder few or no pollen grains or stone cells should be present." No sample of Cannabis Indica has been met with which could be said to conform strictly with these requirements. Some contained a few, others a large number of stone cells. This standard has not been rigidly adhered to.—L. F. KEBLER.

Cantharides, Russian. 0.4 percent, 0.43 percent, 0.4 percent, 0.44 percent, 0.34 percent Cantharidin.—E. L. PATCH.

Capsicum. Alcoholic extract 23 percent, 21 percent, 24 percent, 19 percent. Ash 5.2 percent.—E. L. PATCH.

Mostly of good quality. Ash 8.77 percent.—L. F. KEBLER.

Cardamom Fruit. The question of the admissibility of so-called "Green Cardamoms," those which have not been bleached and which are of a pale greenish-brown tint, has been discussed. These are certainly of good quality and it would be a wise move for the Pharmacopoeia to alter its description so as to admit them. The admissible percentage of shell is another mooted question. A really good cardamom will yield 70 to 75 percent of seeds, but it seems reasonable to place the requirements a little lower.—H. H. RUSBY.

Cardamom Seeds. It has taken but one short year of insistence upon purity

to completely break up the former almost general practice of adding spurious seed to the extent of 25 percent to 50 percent. —H. H. RUSBY.

Of 17 cases 16 were of good quality. One contained many broken seeds, dirt, refuse and other foreign matter and was destroyed. One lot was 50 percent spurious seed. One contained 1.1 percent stones, 0.1 percent rice, 1 percent other foreign matter. In one the seeds had been affected by some blight or parasite and had turned to a reddish color. One lot had heated and fermented and lost its natural odor and taste. It was worthless. One lot contained 15 percent of little stones or grains of dried mud of same size and color as cardamoms. One lot consisted of cullings of good cardamoms. One lot 36 percent of shells and does not agree with the U. S. P. Two samples of small and shriveled seeds mixed with full-sized seeds of bad color, gave 7.4 percent and 7.43 percent ash instead of the U. S. P. limit of 4 percent. Another sample gave 37 percent of shell. A good sample should not give over 25 to 30 percent of shell. Two lots contained 51.15 percent and 52.15 percent of Bastard Cardamoms and 2.25 percent and 3.8 percent dirt and other foreign matter.—L. F. KEBLER.

Cascarilla Bark. Ash 8 percent, 12.8 percent, 6.6 percent, 7.4 percent.—E. L. PATCH.

The quality of this bark becomes steadily poorer. It is now mostly shavings and there is much wood shavings with it. Since it is nearly all used for incense, the fact creates little interest.—H. H. RUSBY.

Cassia. Sixty-seven shipments were of fair to good quality. Ash ranging from 1.85 percent to 4.99 percent. One lot was composed of scraps and sortings with a little admixture of spurious barks. Four contained a small amount of small stones and sticks. One was a low-grade Ceylon Cinnamon. One contained an excess of twigs, leaves and other foreign matter. One appeared to be a species of cassia or cinnamon, but not the kind commonly used. Much harder than common kinds, of a mucilaginous character and unpleasant bitter taste. One sample labeled "Africa bark," had a faint taste and was of poor quality.—L. F. KEBLER.

Celandine Herb. One lot very dirty and contained numerous weeds.—L. F. KEBLER.

Celery Seed. Ash 7.15 percent to 11 percent. Of 33 lots, three contained a small amount of foreign seeds, dirt and broken stems. One was of very poor quality, containing fine ground rock and giving 31.88 percent ash. One lot contained sand and gravel. One lot 19.72 percent of foreign seeds, stems, broken leaves, gravel and dirt.—L. F. KEBLER.

Chamomile. Of sixteen lots, one was neither "Chamomile" nor "Camomile." It was composed of leaves of a plant similar to tea plants. It grows in Greece and is used in making a brew, used the same as tea. Used especially in colds. One lot corresponds to a species of *Teucrium* in botanical characteristics.—L. F. KEBLER.

Chicory Root. Ash 4.2 percent to 15 percent. Moisture at 110° C. 8.4 percent to 9.4 percent. Two shipments were damaged by fire and water on the vessel. One had 905 bags good quality, 2095 bags damaged. The other had 1097 bags good quality, 2403 bags damaged. One sample showed latex tubes

and vessels of fig. One shipment was filthy and decomposed. Had been water-soaked.—L. F. KEBLER.

Cinchona Rubra. For years practically all of the bark so-called was only a hybrid, but recently, and especially for a year past, fine quill bark of pure *Succirubra* has frequently been received.—H. H. RUSBY.

Most of the *Cinchona* bark imported is satisfactory. Alkaloids 4.28 percent to 9.68 percent, ash 1.36 to 6.55 percent, moisture at 110° C. 6.5 to 10.5 percent. One sample was a little dirty. One lot was deficient in alkaloid, 0.605, ash 29.4 percent, moisture 12.10 percent. One lot very inferior, contained much foreign tissue and but a small percent of *Cinchona*, alkaloids 0.76, ash 24.87 percent. *Cinchona* quills, alkaloid 7.85 percent, ash 3 percent, moisture 4.5 percent.—L. F. KEBLER.

Cinnamon Ceylon, Powd. Ash 8 percent, powd. ash 5.2 percent (U. S. P. limit 4 percent.)—E. L. PATCH.

Cinnamon. Two lots inferior (old) bark of Saigon Cinnamon. One lot not true cinnamon (*Cinnamomum zeylanicum*) but cassia bark. Water in which some samples stood ten or fifteen minutes showed trace of chlorides. Two lots contained much wood fiber.—L. F. KEBLER.

Cloves. Of 489 lots 363 contained less than 5 percent of stem; some as little as 3.9 percent. Other lots contained some 5.5 percent to 15.4 percent stem, and some practically all stem. These last were for use in distillation. Three lots of clove stem gave 7.43 percent, 8.01 percent and 8.09 percent ash.—L. F. KEBLER.

Coca. Fifty lots examined gave alkaloid from 0.59 percent to 2.208 percent, ash 6.65 percent to 12.62 percent, moisture 3.1 percent to 9.2 percent. One lot gave only 0.14 percent alkaloid.—L. F. KEBLER.

Cocaine. Some shipments labeled "Cocaine" proved to be "Crude Cocaine," containing 2.3 percent to 2.5 percent ash, 0.75 percent moisture, 92.2 percent to 95.43 percent alkaloids and also cinnamyl and isotropyl cocaine. Should have been labeled "Crude Cocaine, for manufacturing purposes only."—L. F. KEBLER.

Cocculus Indicus. Good quality. Ash 4.18 percent, 4.67 percent.—L. F. KEBLER.

Cochineal. Twenty-three samples examined gave from 2.23 to 12.76 percent ash. Only three were above the U. S. P. limit of 6 percent. Part of the shipments were silver gray and one black.—L. F. KEBLER.

Cohosh, Black. One lot satisfactory. Ash 11 percent, moisture 8.6 percent.—L. F. KEBLER.

Colchicum Root. Of 36 lots examined, 29 assayed 0.4 percent and under, 14 of the number being below the U. S. P. standard. Twenty-two assayed at or above the standard. The highest was 0.72 percent and the lowest 0.234 percent.—L. F. KEBLER.

Colchicum Seed. Eleven lots assayed from 0.5 to 1.12 percent. Ash of one lot was 2.5 percent.—L. F. KEBLER.

Colocynth.

	Absolute Ether Extract	Iodine value of Ether Extract	Ash	Loss at 110° C.
Lot 1	6.92	44	18.81%	4.9%
Lot 2	8.36	17.4	12.4	6.4

One lot labeled Colocynth apples contained:

Pulp	26%	Seeds	68%
Fixed Oil	1.75%		11.96
Loss at 110° C.....	7.5%		6.2
Ash	8%		2.46
Water Insol.....	0.75%		1.16

Other lots gave higher ether extractive or fixed oil, showing presence of seeds. The U. S. P. Colocynth (bitter apple in the index) is the pulp free from seeds. The importation of powdered colocynth containing seeds, is illegal. Some lots yielded over 22 percent of ash. One lot old and brown consisted of unpeeled fruit. It has been generally believed in the trade that the character of pulp imported is decidedly inferior, similar to the colocynth, but not of the specific character of this drug. This will require an extended investigation.—L. F. KEBLER.

Collodion Flexible. 100 cc.=6 G. residue; should =10 G.—E. L. PATCH.

Coltsfoot Leaves. Genuine and satisfactory. Ash 18.7 percent, loss at 110° C. 10 percent.—L. F. KEBLER.

Condurango Bark. Satisfactory. Ash 8.28 percent to 12.30 percent.—L. F. KEBLER.

Conium Seed. Alkaloids 0.56 to 0.75, ash 0.92 percent to 6 percent.—L. F. KEBLER.

Copaiba. Thirty-nine satisfactory samples gave following results: Sp. gr. 0.935 to 0.997, refractive index 1.5025 to 1.5008, resinous mass 36 percent to 67 percent, acid resin 1.7 to 3.2. Seven contained gurgun balsam. Sp. gr. 0.928 to 0.995, refractive index 1.5018 to 1.516, resinous mass 40.4 to 62.3 percent, acid resin 2.2 to 3.1. Six lots contained paraffin oil. Four of these appeared to be African Copaiba. They were not completely soluble in glacial acetic acid. Sp. gr. 0.980 to 0.988, refractive index 1.5125 to 1.5128, resinous mass 65.5 percent to 70 percent, acid resin 2.8 to 3.1. One lot labeled Canine balsam proved to be Copaiba. One lot testing pure had a sp. gr. of 1.140. Twenty-seven lots contained from a trace to 25 percent of gurgun balsam. Five lots were African balsam. One lot contained added rosin. In many cases where it was known that the product was of proper origin the tests applied indicated that the commodity was adulterated. On account of these findings it was considered desirable to prohibit entry only when it was clearly established that adulteration existed. A complete investigation of this commodity from source of production to ultimate consumer should be made before we can accurately judge of quality of lots not flagrantly adulterated.—L. F. KEBLER.

Coriander. Some time ago a report was in circulation of this drug being heavily adulterated with vetch seed. The greatest watchfulness has failed to discover any such case.—H. H. RUSBY.

One lot had 12 percent of dirt and stems. Twelve lots were satisfactory, having less than 4 percent of foreign matter. One shipment contained many broken and immature seeds and 17.52 percent of foreign seeds. One lot had 6.3 percent of foreign seeds, stems and dirt. One lot was over-ripe and fit only for distillation. Three lots consisted of old and worm-eaten stock. One contained a large number of beetles, dead and alive, also foreign seeds, gravel, stems, etc.—L. F. KEBLER.

Coto Bark. Neither Coto nor Para-coto has been seen in the market during the past year, though many spurious lots of different kinds have been offered.—H. H. RUSBY.

Four lots marked Coto were wholly spurious. One lot marked "False Coto Bark" was true to name.—L. F. KEBLER.

Cubeb. Twenty-four lots were of good quality. Two gave 5.25 percent and 6.75 percent ash. Ten lots were unsatisfactory, containing over-ripe or immature poor quality berries, excess of stem and sticks and foreign matter. They were only fit for distillation. Thirty lots labeled "Cubeb with stems" consisted in part of immature and over-ripe berries, stalks and excess of stem. Were only fit for distillation. One lot gave, volatile ether extractive 10.84 percent, non-volatile 10.42 percent. One case was merely siftings, to which a few good berries had been added to improve the appearance. Two lots marked "Cubeb siftings" consisted of cubeb dust and coarsely ground stalks. Was unfit for use and was destroyed. On account of prevailing conditions it was ruled that a satisfactory product "should not contain in excess of 5 percent of stems and 5 percent worthless berries" (meaning berries containing little or no oil.)—L. F. KEBLER.

Cumin Seed. Five shipments of good quality. Foreign material 0.74 percent to 1.7 percent. Three importations slight excess of foreign material, 5 percent to 6.88 percent. Two lots contained an excessive amount of foreign material, sticks, foreign seeds, mostly plantain, a few coriander seeds and a small amount of mineral matter, total 16 percent and 21.8 percent. One contained seeds, which readily disintegrate, and was full of dust. Two contained considerable gravel, ash 12.9 percent, 13.08 percent. Two contained a large amount of undeveloped and unfertilized grains.—L. F. KEBLER.

Dandelion Root. Thirteen lots examined were of good quality. Four were inferior. One contained grass and other vegetable refuse, was musty and mouldy and unfit for use. One was ground and contained a large amount of inorganic matter, mostly small gravel, having the appearance of ground root. One contained 10 percent of foreign roots and tops. One was inferior in physical appearance, containing many small and worthless roots.—L. F. KEBLER.

Digitalis. New crop shows a great improvement in cleanliness of collection and care in preservation.—H. H. RUSBY.

Fifty lots were of fairly good quality. Ash in one lot was 7.8 percent.

One lot consisted almost wholly of large root leaves collected in the fall previous to season of flowering. U. S. P. demands leaves of second year at flowering time. One lot was carelessly dried. Two contained large amounts of grass, sticks and black leaves, showing improper curing. One lot of 18 bales had 7 unfit for medicinal use and 11 of good quality. One lot was very stemmy and carelessly dried. Two contained sticks and grass, but were otherwise satisfactory.—L. F. KEBLER.

Doggrass. Two lots genuine and good quality. One consisted of stems and root stalks of Bermuda grass, sometimes called Dog's Tooth Grass.—L. F. KEBLER.

Dry Herb. One shipment so labeled was a dried rhizome closely resembling Doggrass. The importer stated that it is used entirely by Italians for making tea.—L. F. KEBLER.

Elder Root Powder. Two shipments contained a seeming excessive amount of ash. Importers state that the root is excessively hard and of the toughest fibre and must be subjected to a milling process of longer duration than ordinary drugs. Ash 18.11 percent and 22.4 percent, moisture 5.39 percent and 8.06 percent.—L. F. KEBLER.

Ergot. This drug continues to be one of the most interesting of drug imports. The rigid application of standards applied last year to Spanish Ergot was rewarded by the supply this year of shipments almost all of which were fully acceptable. Such, however, has not been the case with Russian Ergot. This has again been mostly packed while wet, with the result of developing quantities of worms, besides fermenting and more or less decomposing the grains. Continued rejection of such ergot led shippers to clean it of its worms and worm dust before shipping, and to doctor its external appearance. The spoiled grains, of course, could be neither cured nor removed, so Russian Ergot has at best been quite poor. It is to be hoped that the reform that has been active among shippers will extend to the producers so that next year's crop will be of a different character.—H. H. RUSBY.

Sixty-eight lots were of good quality. Ash of two lots 2.55 percent and 2.57 percent. Twenty lots had been kept more than a year and in many cases had lost most of the internal purplish color of fresh ergot. Five lots were unsatisfactory, 27 contained 33 percent of immature and wormy pieces, 4 were brown inside, decayed and wormy, unfit for use. Nine lots small and immature grains which had been kept too long and had lost their strength. One looked as if it had been soaked in sea water and was unfit for use. One lot contained mouldy and wormy pieces. One was damp and slightly musty, but not mouldy. One contained many pieces soft and leathery, but of excellent external appearance. One had a large admixture of grains of rye, not ergotized. Most of the grains of ergot had lost their pinkish internal color. Seven lots were worm-eaten, mouldy and decomposed, unfit for use. In some instances it appeared that the product was damaged by undue exposure and if the character of ergot does not improve some steps must be taken to secure its shipment in sealed containers.—L. F. KEBLER.

Euphorbia Pilulifera. Four lots satisfactory. Ash of one lot 10.13 percent. One lot consisted almost wholly of stems and contained a large amount of other plant tissue which did not belong to the drug. One lot consisted in large part of broken leaves separated from the stem.—L. F. KEBLER.

Ether Nitrous Conct. 93.27 percent, 77.25 percent.—E. L. PATCH.

Fennel. The presence of fine gravel and pellets of earth in brown varieties of fennel has become very common. Ash determination is the best quantitative test.—H. H. RUSBY.

Forty-one samples were fair to excellent. Ash 7.2 percent to 8.6 percent. Thirteen samples were unsatisfactory, containing mouldy fruits, excessive quantity of foreign seeds, gravel, stem tissue, old or damaged seeds rendered worthless by insect attacks. One lot contained 23 percent of poor seed, dirt, stones, stems and foreign seeds. Four lots consisted of old and musty seeds with an admixture of weed seeds, sand, small gravel and dust. One contained 15 percent of dirt. Another 37.5 percent of stems and dirt. Two other lots contained excesses of stems, dirt and small stones. Ash 11.14 percent and 17.24 percent

Fennel seed should not contain more than 5 percent of stems and other foreign matter and should not yield over 10 percent of ash.—L. F. KEBLER.

Foenugreek. Fifteen lots were of good quality, ash 2.75 percent to 4.9 percent, and 8 lots of fair quality containing from a small percentage to 8.6 percent of foreign matter.—L. F. KEBLER.

Flaxseed. Is mostly of good quality, containing from 3.2 percent to 4.7 percent of oats, chaff and foreign seeds.—L. F. KEBLER.

Galega Herb. One shipment, correctly labeled, had been completely spoiled in drying and was unfit for use. This drug is the chief constituent of Vaucaire obesity treatment.—L. F. KEBLER.

Gamboge. Most lots were satisfactory, with ash from 0.6 percent to 1.52 percent, alcohol insoluble portion 24.0 percent to 38 percent. One lot had an excess of alcohol insoluble portion amounting to 52.37 percent. One lot was peculiarly adulterated. A small stick of dark colored unfit gamboge was imbedded in the center of almost every one of the large lumps. After removal, alcohol insoluble 21.82 percent, ash 1.08 percent.—L. F. KEBLER.

Gelsemium. Ash 2.3 percent, moisture at 110° 7.10 percent.—L. F. KEBLER.
Alkaloid 0.5 percent.—E. L. PATCH.

Gentian Root. Ten samples out of 33 were adulterated with cocoanut shells. The drug gave only 19.8 percent extractive to hot water instead of 30 percent to 40 percent.—APOTH. ZTG.

Of 53 lots 43 were satisfactory. Four were of fair quality. One was adulterated with peanut shells. Moisture at 110° C. 6 percent, ash 4.5 percent, insoluble ash 1.2 percent. One contained stone cells in abundance. Ash 5.73 percent, moisture 8.91 percent. One heavily adulterated with starch. One contained 5 to 10 percent of ground olive pits. One 3.8 percent of dirt and foreign matter. One was deficient in extractive matter. Gentian present was rotten and unfit for use. Moisture 6.68 percent, ash 8.94 percent, water soluble material 23.72 percent, alcohol soluble matter 29.5 percent.—L. F. KEBLER.

Ginger Root. Alcoholic extract 5.2 percent, 5.7 percent, 4.2 percent, 4 percent, 4.5 percent, 4.9 percent, 3.5 percent, 4.8 percent, 4.3 percent in whole root.—E. L. PATCH.

Eighty-three samples were satisfactory. Twenty-nine of these gave, ash 3.2 percent to 6.72 percent, ash insoluble in 10 percent Hydrochloric acid 0.17 percent to 1.89 percent, crude fibre 3.26 percent to 7.5 percent. Twenty-two lots were marked "Spent Ginger." Three gave:

Ash	Water soluble Ash	Alcoholic Ext.	Ethereal Ext.
1.47%	0.26%	6.20%	5.84%
1.47%	—	4.89%	4.98%
1.83%	0.24%	5.31%	6.37%

One lot contained dirt and other debris and was worm-eaten. One sample was colored with a coal tar dye corresponding to Cochineal Red—A.—L. F. KEBLER.

Glycerin. Manufacturers seem to be unable to make a glycerin that is free from volatile acids.—W. L. SCOVILLE.

Goldenscal. One sample, dirty, assayed, alkaloids 3.01 percent, moisture 8.3 percent. L. F. KEBLER.

Powd. Hydrastis gave Hydrastine 1.6 percent. Whole drug, 3.48 percent, 3.44 percent.—E. L. PATCH.

Varied from 0.9 percent to 3.84 percent. Owing to high prices prevailing it should be watched closely.—W. L. SCOVILLE.

Guaiac Resin. Twenty lots were satisfactory. Nine lots gave alcohol insoluble matter 0.2 percent to 13.24 percent, ash 0.3 percent to 3.4 percent, acid number 72.5 to 81, rosin, none. Nine were unsatisfactory, alcohol insoluble matter 9.3 percent to 35.39 percent. Three gave ash 2.02 percent to 5.5 percent, and acid number 30 to 49.56.—L. F. KEBLER.

Guarana. 4.56 percent, 4.73 percent, 4.7 percent, 4.44 percent, 4.17 percent, 5.34 percent, 4.24 percent Caffeine.—L. F. KEBLER.

Hyoscyamus. One sample out of 37 assayed as low as 0.021 percent. The rest assayed between 0.058 percent and 1.00 percent.—W. L. SCOVILLE.

There has been a great deal of difficulty experienced by the trade in securing henbane of proper quality. From the results here given, however, it would appear that the situation has not been worse than in the case of a number of other drugs. One difficulty noted is that the present pharmacopoeial method will not extract all of the alkaloidal matter, but in our work this method is not strictly adhered to. Some good looking lots assayed low and others not as good in appearance and containing a large excess of sand, assayed above standard. Seventy-one samples assayed from 0.063 percent to .196 percent alkaloid, ash from 19.5 percent to 26 percent, moisture 3.5 percent to 10 percent. Fourteen lots assayed .031 percent to .091 percent, ash 28.16 percent to 69.78 percent. This last sample, more than two-thirds ash, assayed 0.053 alkaloid. Quite a number of lots were low in alkaloidal assay (0.02, 0.0275, 0.038, etc., to 0.063) and contained excess of ash. Some samples contained foreign leaves, among which were stramonium, horehound, plantago (25 percent). Nine consisted almost wholly of annual plants, but assayed from 0.074 to 0.163. One consisted of entire herb, including thick stems, and assayed 0.131.—L. F. KEBLER.

Henna Leaves. One lot was stemmy, but was not to be used for medicine. Analysis of one sample gave, ash 9.7 percent, moisture 2.5 percent, leaves 81.64 percent, stems 13.96 percent. One importation contained but a small amount of henna. Consisted largely of leaves having a large number of stellate hairs like those of the chestnut. Also considerable mineral matter present.—L. F. KEBLER.

Hops. One sample contained sulphur dioxide about 1900 mgms. per kilo. Sixty-nine lots were satisfactory. Twelve samples gave trace of arsenic. Less than 1 part per 700,000. Three gave no test for arsenic. Petroleum ether extract in nine samples ranged from 9.39 percent to 13.98 percent. One contained slight trace of alkaloidal substances. Moisture in lots tested was 5.29 percent to 7.22 percent. Resin 8.9 percent to 12.6 percent. Ash contents should not exceed 8 percent. In some cases it was above 16 percent.—L. F. KEBLER.

Horehound. Mostly of good quality. Ash of one lot, 15.8 percent. Three lots chiefly, if not wholly, spurious.—L. F. KEBLER.

Hyssop. Should consist of leaves and tops. One contained considerable stem

without flowers. One was entire herb chopped up. One was chiefly the thick stems cut into short pieces and was unfit for use.—L. F. KEBLER.

Inula. Much of this drug has been injured by excessive heat in drying. In some cases it was brown and semi-charred. This is a very difficult drug to dry without becoming mouldy, but artificial heat must be applied moderately and for a long time.—H. H. RUSBY.

Seven shipments were satisfactory and six not. One was partly decayed and had an excessive amount of butts. One was partly decayed and had mouldy roots with some crowns and stem bases. Two had been either distilled or overheated in drying. One was heavily covered with mould. One lot of 65 bales had been distilled to remove its essential oil, or it had been destroyed by too much heat in drying. Its medicinal value was destroyed.—L. F. KEBLER.

Insect Flowers. Six samples gave, ash 4.35 percent to 7.13 percent, moisture 5.5 percent to 8.34 percent. One inferior lot looked like sweepings and stems. One consisted of open flowers.—L. F. KEBLER.

Ipecac. Samples Po. 10 years old assayed from 2.66 percent to 2.9 percent.—JOURN. PHARM. CHEM., 1913, p. 163.

2.24 percent, 1.837 percent, 1.818 percent.—E. L. PATCH.

The Rio variety has almost ceased to arrive, the Carthagena variety being supplied at a lower price. This is now mostly what is known as Panama Ipecac. It is evidently the Carthagena variety, but it shows some marked differences from that of previous years. Adulterants have almost ceased to be seen in ipecac, as have long and detached ipecac stems. The commercial drug has been nearly perfected.—H. H. RUSBY.

Seventeen lots assayed from 1.42 percent to 2.63 percent alkaloid. Average 2 percent. Ash of four lots was 3.25 percent to 5.25 percent, moisture 8.3 percent to 9.3 percent. Two cases were low in alkaloid, 1.42 percent and 1.43 percent.—L. F. KEBLER.

Ipomoea. Met with a number of times under the name "Mexican Jalap." Some dealers held that the resin from this drug was as efficient as the resin obtained from Jalap proper and it was not improper to use it in place of resin of Jalap. This view is certainly not concurred in by the writer. Ipomoea is probably used for making false resin of scammony. One lot gave, ash 7.9 percent, moisture 5.87 percent.—L. F. KEBLER.

Iron Chloride Solution. 10.4 percent Fe. 9.28 percent excess HCl. The U. S. P. should be 4 to 5 percent excess.—E. L. PATCH.

Jaborandi. One importation was wholly spurious jaborandi unfit for medicinal use. Assay, 0.124. Sixteen lots satisfactory, assayed from 0.696 to 1.2 percent. Two lots gave, ash 7.45 percent, 7.9 percent; moisture 5.91 percent, 6.7 percent.—L. F. KEBLER.

Jalap Resin. One lot so labeled was not pharmacopoeial. Another precipitated with hydrochloric acid, gave a greenish blue with ferric chloride and contained excessive amounts of acid resins and saponifiable matter. Two other lots apparently not jalap resin.—L. F. KEBLER.

Jalap.

59 bags—	Total resin 6.66.	Ether Sol. Resin 0.75
8 bags—	Total resin 6.07.	Ether Sol. Resin 0.76

—S. K. F.

Total Resin	13.07	Ether Sol. Resin	0.77
Total Resin	18.43	Ether Sol. Resin	1.43
Total Resin	7.33	Ether Sol. Resin	0.83
Total Resin	6.63	Ether Sol. Resin	0.68
Total Resin	5.95	Ether Sol. Resin	0.75
Total Resin	7.27	Ether Sol. Resin	0.67
Total Resin	5.51	Ether Sol. Resin	0.71

—E. L. PATCH.

Some interesting lessons are to be learned by observing this drug. Its percentage of resin may be said to increase almost uniformly with the size of the tubercles, other things being equal. Plenty of jalap exists and is collected that yields 15 to 18 percent of resin, but that which our dry market receives is almost always just a little above the U. S. P. requirements, and so it will always be. If we were to lower this requirement the quality of imports would in the main at once drop accordingly and the converse would certainly be true. The supply will always work up or down according to the demand. The spurious Tampico jalap, or so-called Mexican scammony, has come mixed with the genuine and this must be watched for.—H. H. RUSBY.

Ranges from 2.5 percent to 8.87 percent resin.—W. L. SCOVILLE.

Twenty-one lots satisfactory. Resin 7.13 percent to 20.16 percent, ash 3.62 percent to 5.67 percent. One lot small tubers, immature and rather wormy, assayed 20.71 percent resin. Three lots were unsatisfactory.

1	Resin 3.2%	Ash 5.58%	Moisture 10.25%.
2	Resin 6.088		
3	Resin 5.55	Ether soluble resin excessive	2.17%.

—L. F. KEBLER.

Juniper Berries. The crop has been poor, many immature or dry berries being found among the good ones. In several instances advantage seems to have been taken of this fact to add exhausted stock.—H. H. RUSBY.

Thirteen lots were fair to good quality. One was sloe berries. Three consisted largely of old, mature juniper berries (one 50 percent with sticks, stones and dirt) and were fit only for distillation. Six lots consisted largely of exhausted berries.—L. F. KEBLER.

Kamala. This now comes of uniform good quality instead of with 30% to 80% of mineral matter as formerly.—H. H. RUSBY. Seventeen lots were satisfactory. Ash 2.58% to 6.90%. Five lots were badly adulterated, containing either ground olive stones, bark, sand, quartz crystal, or dirt. Ash 28% to 58%. Two lots of genuine had excessive ash 9.35% to 12.6%. A package from a lot was examined and found satisfactory. The importer found samples from the same lot unsatisfactory. Re-examination showed that some packages were pure kamala, while others in the same lot were adulterated, showing the necessity of examining every bale.—L. F. KEBLER.

Keischguhr.

	Color	Ignited loses	Water sol.	Acid Water sol.	Carbonate
1	Grayish	7%	3.2%	5.6%	Trace
2	Dark Green	14%	1.2%	27.2%	Excess
Lot No. 1	washed with acid water, then water and dried—				
		7%	0.5	1.50	None

—E. L. PATCH.

Kino. Ash 0.9% to 1.66%. Moisture of one lot 12.22%. Alcohol insoluble excessive 36.2%. In good samples 11.55% and 12.10%.—L. F. KEBLER.

Lactucarium. The small amount received has been much better than that of last year, being either freer from mould or affected only superficially.—H. H. RUSBY. Ash 5.9% to 6.6%. Moisture 5.09%. Two lots consisted of rotten, mouldy fermented matter, unfit for use. Two others were moulded through and through and were totally unfit for use.—L. F. KEBLER.

Larkspur Seed. One lot of satisfactory quality. Ash 5.06%. 0.22% impurities, 0.181% gravel, 0.039% foreign seeds. Three shipments were not the larkspur seed recognized in medicine. Alkaloid 0.04%.—L. F. KEBLER.

Lavender Flowers. Mostly satisfactory. One lot was old flowers nearly odorless, mixed with stems and dirt of disintegrated flowers.—L. F. KEBLER.

Licorice Root. Large quantities of the cut root have arrived and the quality has been very good.—H. H. RUSBY.

Licorice. Two lots—Ash 5.05% and 5.40%. Moisture 6.07% and 8.35%. Extractive 26.32%, 27.88%. One consignment was mouldy and unfit for use.—L. F. KEBLER.

Lily Root. Five lots were filthy, decomposed and unfit for use.—L. F. KEBLER.

Lorage Root. Good quality, gave Ash in root 9.26%; in rhizome 7.06%. Moisture in root 7.8%; in rhizome 7.5%.—L. F. KEBLER.

Luplin. Ash 11.72%. Ash insol. in HCl. 6.71. Ether soluble 75.46%.—S. K. F. Following upon the refusal of the authorities to admit the old lupulin that the brewers would not take, a good fresh article is now commonly seen.—H. H. RUSBY. One lot gave 13.02% ash, but gave 69.75% ether extract, was to be used in beer making.

Lot 1.....	13%	ash	72.9%	ether extract
Lot 2.....	11.8%	ash	68.39%	ether extract
Lot 3.....	8.55%	ash	78.59%	ether extract

Fifty-three others gave—Ash 10.23% to 19.75%. Ether extract 63.96% to 77.82%. Five lots consisted of old lupulin, a large amount of sand, too many black and worthless particles, and were unfit for medicinal use. Ash 7.41% to 27.31%. Ether extract 59.04% to 75.16%. One lot labeled "Contains 7½% of ash in excess of U. S. P. requirements" did contain 45.42% of ash or 35% excess. Two other lots were old, spoiled and unfit for medicinal use.—L. F. KEBLER.

Lycopodium. This drug was formerly always contaminated with flour, usually in very small amount, and it was claimed that this resulted from storage in flour sacks or barrels. Persistent objection has developed a commercial article in which scarcely a grain of starch can be found. Of much interest was a shipment of corn starch so perfectly colored as to exactly resemble lycopodium. A

peculiar feeling between the fingers betrayed it, even before the microscope was applied.—H. H. RUSBY. Essentially pure, although some lots contained a trace of starch or fine pollen. One sample contained as high as 1.35% starch, while three contained enough to constitute an adulteration, 6.53%, 5% and 12%. Ash contents ranged from 0.17% to 1.96%.—L. F. KEBLER.

Manaca. Moisture 7%. Ash 1.4%. Alkaloids present. One lot was pareira brava.—L. F. KEBLER.

Marjoram. This drug, which now always arrives cut, has been made the subject of observation during the year, and much of it has been found adulterated with rosemary and other leaves.—H. H. RUSBY. Ash contents 11.6% to 17.23%. Two lots contained pebbles and grains of sand, and two others were good leaves but very dirty. Highest ash contents 25.21%. One lot contained 9.32% of foreign leaf, dirt and gravel; two others were mostly spurious, containing only fragments of marjoram.—L. F. KEBLER.

Marrubium. This drug has caused more trouble than almost any other. Various adulterants, but especially *M. peregrinum*, have been admixed. The admixture has been very unequal, some bales with none, others, of the same lot, heavily contaminated. The widest difference may be found in different parts of the same bale.—H. H. RUSBY.

Matico. The spurious variety, which a year or two since was said to be the only thing attainable, still arrives, but is yielding place to the genuine.—H. H. RUSBY. Six consignments of good quality gave—Ash 7.7% to 16.65%. Moisture 3.85% to 6.96%. Several lots were partly or wholly spurious. The spurious leaves were mostly *P. mandoni* and *P. aduncum*.—L. F. KEBLER.

Milk Sugar. Parry has examined 100 samples. He finds evidences of carelessness in manufacture indicated by color, odor, solubility and liability to decomposition. Five samples were cheesy on account of casein. Five were not entirely soluble on account of casein. Samples liable to decomposition or fermentation contained casein of poor quality. One sample contained 0.06 percent of magnesium salts. All the samples were of European origin.—CHEM. AND DRUGGIST.

Mustard. It is not generally known that black and white mustard frequently exchange color, while retaining all their other characteristics. This sometimes makes a good sample look very bad until it is carefully examined. The percentage of charlock in black mustard is very difficult to estimate and it is not remarkable that ground mustard is sometimes held up on this charge when the grinder is very positive that it is unfounded. He has simply not examined his whole seed with sufficient care.—H. H. RUSBY. Different lots contained from 80 to 99.00 percent white mustard seed. Brown and black seed 0.71 percent to 19 percent. Mineral matter 0.19 percent to 1.9 percent. One lot contained 15.5 percent of foreign seeds; another 21.8 percent of poor seed. Two lots contained 22.88 percent and 36.46 percent of foreign seeds. Thirteen other lots contained from 1.11 percent to 12.65 percent of foreign seeds, charlock, Chinese mustard, rape, lambs quarter, smartweed, false flax, millet, etc. One lot was almost wholly charlock with an admixture of rye and wheat. One other had 26.4 percent charlock and 1.5 percent of other foreign matter.—L. F. KEBLER.

Myrrh. Nine samples ranged from 25.1 percent to 38.7 percent soluble.—W. L. SCOVILLE. When in the ordinary form is of excellent quality, but Myrrh siftings have to be scrutinized with great care as they are apt to be loaded with fine fragments of other gums, beside gravel and dirt.—H. H. RUSBY. Satisfactory lots gave 4.02 to 10.25 percent ash. Several lots were siftings and gave excessive ash (11.75 percent to 13.83 percent) and alcohol insoluble matter (64.19 to 74.1 percent).—L. F. KEBLER.

Nux Vomica. Almost impossible to find drug assaying U. S. P. standard of 1.25 percent Strychnine. One sample Ext. Nux Vomica assayed 8 percent instead of 5 percent.—C. E. VANDERKLEED. 1.32 percent, 1.29 percent, 1.22 percent, 1.20 percent.—E. L. PATCH. Ash contents 0.9 percent to 1.88 percent, moisture 5.57 to 9.65 percent, Strychnine 0.9 percent to 1.6 percent.—L. F. KEBLER.

Olibanum, Gum. Five lots of good quality gave ash 0.95 percent to 3.69 percent. One lot gave alcohol soluble 74.8 percent.—L. F. KEBLER.

Ononis Root. Two lots of good quality gave moisture 8.52 percent and 9.30 percent; ash 5.94 percent and 11.01 percent. One lot was mouldy and unfit for use. Its activity is due to glucosides especially liable to damage from fermentation and such a product as this one should not pass into interstate commerce.—L. F. KEBLER.

Opium.

Gum	12.37%	11.19%	9.18%	11.04%
Powd.	11.16%	12.35%		
Gran.	12.40%			

2 lumps weighing about 4 lbs. contained two stones weighing 13 ozs.

E. L. PATCH.

Different lots assayed—Crude Morphine 13.2 percent, 12.03 percent, 14.5 percent, 12.6 percent, 10.1 percent, 11.6 percent. Purified Morphine 9 percent, 10.33 percent, 1.05 percent, 11.7 percent, 9.99 percent, 11.58 percent. Two lots of prepared opium gave little morphine, 1 lot 9 percent, 1 lot of powder, 5.2 percent. Were probably smoking opium. Thirteen lots gave from 8.93 percent to 15.9 percent morphine. One lot of deodorized assayed 15.68 percent.—L. F. KEBLER.

Origanum. Under this name with no qualifying word, only the purple topped *Origanum vulgare* should be supplied. During recent years other species, *O. Dietamnisi*, *O. creticum*, *O. onites*, etc., have been substituted. Pressure being applied there has been a return during the past year to the genuine species.—H. H. RUSBY.

Papain. Is extremely variable. On an arbitrary standard samples ranged from 25 percent to 100 percent of the standard. No attempt to ascertain the relative strength of those testing up to standard. Samples below 50 percent of the standard were common.—W. L. SCOVILLE. Contains about 50 percent (53 percent) of bread crust. The entire mixture powdered:

- 1 part digested 20.2, fibrin Neut.
- 1 part digested 24.1, fibrin Alk.
- Bread crust removed—1 part digested 36, fibrin Neut.
- 1 part digested 46, fibrin Alk.
- The Bread crust had some adhering papain and tested
- 1 part digested 7.5, fibrin Alk.
- No. 2 1 part = 23.1 parts fibrin (dry beef) neutral.
- " 26.5 parts fibrin (dry beef) alkaline.

E. L. PATCH.

Pareira Brava. This drug is almost uniformly spurious, or adulterated, or mixed largely with stem pieces. One of the adulterants is very difficult to distinguish when cut into short pieces, but it contains much less alkaloid and fat.—H. H. RUSBY. One lot 9.4 percent moisture, 5.6 percent ash. One sample contained excess of stem. Root only is official. One lot was not Pareira Brava, nor had it any relationship or similarity to that drug.—L. F. KEBLER.

Parsley Seed.

Foreign matter.....	2.11%,	1.21%.
Total Ash.....	7.03%,	9.92%, 6.61%.

L. F. KEBLER.

Peppermint. One shipment was Spearmint that had been partially exhausted of its active constituents. Another had 10 percent of Spearmint leaves.—L. F. KEBLER.

Pepper, Black. Seventy-five lots gave from 3.65 percent to 6.42 percent of ash. They were of good quality. Ten lots gave 11.08 percent to 13.15 percent crude fibre. Three lots gave 10.04 percent, 10.87 percent and 12.88 percent of ethereal extract. The iodine number of one lot of extract was 126.3. A few lots were dirty and contained sand and other impurities. Ash in one lot 12.02 percent. Some lots contained excess of shells. One gave crude fibre 16.87 percent, Starch 29.97 percent, Ash 6.3 percent. One lot was worm-eaten and larvæ infested and was unfit for food or medicinal use. Four lots were wormy, mouldy and rotten. One lot had 30.5 percent seed, $9\frac{1}{2}$ percent stems. Lots marked pepper shells and dust were true to name.—L. F. KEBLER.

Pepper, Red. Ash 7.93 percent, 8.49 percent, 9.32 percent, 7.95 percent, 9.05 percent, 7.95 percent, 5.68 percent, 8.40 percent. Ether Ext. 13 percent, 10.60 percent, 14.70 percent, 18.91 percent, 13.12 percent, 10.4 percent, 13.25 percent, 14.50 percent. Iodine No. 132.9, 138, 123.4, 107, 127.3, 125.2, 137.3. Seventeen other lots gave ash 4.78 percent to 10.02 percent. Ether extract 11.22 percent to 20.77 percent. Iodine No. 110.4 to 145.7. One lot was misbranded. One 5 percent short weight. One 75 percent of badly moulded and louse infested fruits. One 18 percent mouldy material, 27 percent seeds and 73 percent pods.—L. F. KEBLER.

Pepsin. Several lots diluted to standard with common powdered sugar instead of sugar milk. One lot was 1-2500 only.—E. L. PATCH.

Peru Balsam. Imitation balsam is very difficult to detect by present chemical methods available and substitution will probably continue for some time. Even if it conforms to the pharmacopœial chemical tests it should be rejected as not derived from *Toluifera Perceiræ*. The imitation balsam is not uniform in composition. Fifteen shipments of Peru Balsam gave sp. gr. at 25° C. from 1.14 to 1.154 percent. Cinnamein 50.32 to 66.3 percent. Iodine No. 46 to 66. Three samples contained rosin, which is a common adulterant. Two labeled "Artificial Balsam Peru" contained rosin. One had sp gr. 1.136. Cinnamein 54.80.—L. F. KEBLER. Five consignments labeled "Synthetic Balsam Peru" contained rosin, had high acid number (58.8 to 70) and excessive cinnamic acid (Cinnamein 55.01 to 60.67). Nine samples of good quality official gave acid number 22 to 75.

Cinnamein 52 to 60. One shipment labeled "Artificial" should have been labeled "Imitation." It contained 10.8 percent of alcohol not declared sp. gr. 1.0432. The artificial or imitation products are exported from Germany, but do not comply with the Germ. Pharm. requirements. One lot was a mixture of tolu, rosin, cinnamein and undetermined matter. Many lots are imported as "Artificial," presumably for use in soap making. Two lots imported under the name of "Perugene" gave sp. gr. 1.1 to 1.102, Cinnamein 62.6 to 95.5; Acid number of one was 70.8 Saponification number 247. Perugene formerly contained rosin, which is omitted in later lots.—L. F. KEBLER.

Potassium Acetate. Lot of 50 lbs. had particles of glass in it.—E. L. PATCH.

Potassium Nitrate. 155 percent K Cl. 1.55 percent K Cl. 3.1 percent K Cl. (1.18 percent K Cl U. S. P. standard).—E. L. PATCH.

Protargol. Spurious packages offered showed 4 percent silver and contained over 60 percent insoluble matter. The genuine contains 8.3 percent silver and is entirely soluble in water.—W. C. ALPERS.

Pulsatilla. Ash 7.4 percent to 9.95 percent.—L. F. KEBLER.

Pumpkin Seed. One lot proved to be watermelon seeds. One sample was true to name, but quite old.—L. F. KEBLER.

Quassia.

Chips	Ash	2.2%	Ext. 6%
Ground	Ash	8%	Ext. 7%
Ground	Ash	3%	Ext. 3.3% (apparently partially exhausted.)

E. L. PATCH.

Ash 5 percent to 8.6 percent. One lot showed bitter principle to be practically absent and was mouldy and unfit for use.—L. F. KEBLER.

Quillaja. This bark now always arrives in the cut condition and is of good quality.—H. H. RUSBY.

Quince Seed. Thirty lots were mixed with foreign matter in proportions from 11.2 percent to 55 percent. It consisted of ground or broken bark, dried pulp of immature fruit, broken shells of Brazil nuts and pieces of dried and mouldy fruit. The ash of a good quality product was 4.11 percent.—L. F. KEBLER.

Rhatany. One sample of good quality gave Ash 3.44 percent. Moisture 5.65 percent.—L. F. KEBLER.

Rhubarb.

Shensi	46.2 dry Ext.	H. D. 42.8%	Shensi 39.8%
Canton round	44.7 dry Ext.	H. D. 41.8%	Shensi 36.1%
Canton flat	46.6 dry Ext.	H. D. 46%	
(Alc. 4 Water 1)		H. D. 40.2%	

E. L. PATCH.

The government having anticipated the proposed pharmacopoeial requirement that not more than 15 percent of the pieces shall show a blackish or hollow interior when broken, there has been an immediate response in the form of greatly reduced percentage of such pieces.—H. H. RUSBY. Sixteen lots satisfactory. Ash too high in some cases. 12.23 percent to 37.18 percent. Moisture 4.48 percent to 7.49 percent. Two lots were from *R. Rhaponticum* instead of *R. officinalis*.—L. F. KEBLER.

Red Saunders.

Powd.	37.5% H ₂ O	1.2% ash in dried
	7% H ₂ O	1.2% ash in dried
	44% H ₂ O	1.2% ash in dried

E. L. PATCH.

Resin Scammony. Adulterated with Resin Guaiac. (ERA.)

Roots. Thirty-two samples received at the port of San Francisco invoiced under this name. Of these, 19 could not be identified. All were shipped from China and were undoubtedly to be used by the Chinese. Two resembled Althaea root; two Aralia edulis; one the outer peeling of Pachyma Cocos; one cherry gum coated with benzoin; two sliced roots treated with burnt molasses or syrup; one a species of dock; one sliced roots of egg plant; one yam, or some species of Iris; one taraxacum or chicory. Two lots were mouldy and unfit for use.—L. F. KEBLER.

Rosemary. Ash 5.1 percent and 5.2 percent. One lot contained many small leaves, many dark colored and withered and 8.92 percent of stems and capsules. One, invoiced "Distilled Rosemary leaves" was true to name. Leaves very black and "dead." Ash 6.07 percent.—L. F. KEBLER.

Saffron. Wasicky (Pharm. Post.) has found a sample of saffron which was strongly adulterated with unbroken flowers of onopordon acanthium (cotton thistle). This adulterant can easily be detected microscopically by the presence of narrow connectives and peculiarly formed conglomerations of crystals, which are absent in true saffron.—DRUGGISTS CIRCULAR. It is not likely that so great a turnover was ever made in the quality of an article as has been made in the quality of Spanish Saffron imported into this country. A few years ago one could not expect to get a genuine and pure saffron. Now we have no expectation of getting anything else. The last attempt that has been made is that of causing the tissue to absorb a sugar solution. During this year several large shipments of Safflower have been offered as "Asafran," the Spanish name for Saffron.—H. H. RUSBY. Thirty samples gave moisture 6.58 percent to 16.83 percent. Ash 3.9 percent to 6.85 percent. Petroleum ether extract 1 percent to 4.19 percent. Thirteen lots contained from 4 percent to 8 percent added oil. Several contained excessive moisture 17.01 percent to 18.09 percent. Nineteen contained excess of inorganic matter giving ash 27.7 percent to 32.01 percent. The additions were Borax, Sodium Chloride, Sulphate and Carbonate and Potassium Nitrate. Several were colored with coal tar dye. One such gave 33.3 percent ash and 20.78 percent petroleum ether extract. Two lots were Safflower. One consisted entirely of florets related to those of the thistle, which had been artificially dyed to represent saffron and weighed. Ash 47.73 percent; 37 contained excess of yellow tissue 6.7 percent to 21.17 percent. Should not exceed 5 percent. Seventy gave water soluble 44.07 to 54.86 percent. (It is not stated whether the drug lost these amounts to water or yielded these amounts of aqueous extract.) The importations of 1912 were of better average than those of previous years.—L. F. KEBLER.

Sage. Some lots contained excess of stem (9.3 percent to 48 percent) Ash

of three lots—3.8 percent to 8 percent. One lot was *Salvia triloba* and contained excess of stems. It was unfit for medicinal use.—L. F. KEBLER.

Sambucus. Elderberry flowers are supposed to be those formerly official, from *S. Canadensis*, but when our crop is short the European species is imported. There seems no reason why it is not equally acceptable.—H. H. RUSBY.

Sandalwood. Ash—one lot 1.6 percent. One sample was not sandalwood but the wood of *Amyris balsamique*.—L. F. KEBLER.

Santonica. Many large shipments have arrived of a form of this drug that is puzzling. It so closely resembles the genuine that it may well be regarded as a young form of it and its odor is exquisite. On assay it is found to contain less santonine, often very little and sometimes none. It is shorter, greener and often has a short piece of peduncle attached. It is much in need of investigation.—H. H. RUSBY.

Sarsaparilla, Mexican. From the interior of Vera Cruz have arrived several shipments of a very thick blackish, woody and decidedly astringent *Sarsaparilla*, having the general features of Mexican. All that could be learned of the origin was that it was this variety from old plants. Its flavor is opposed to this view and we must regard it as of unknown origin.—H. H. RUSBY. Some shipments consisted of rhizomes or an excessive amount (73.3 percent) of stems and rhizomes. The pharmacopœia recognizes the roots only. One lot was totally spurious, consisted of some species of *Aralia*.—L. F. KEBLER.

Savory. Ash from 6.10 percent to 12.5 percent. One lot contained 33.8 percent of stems and 1.3 percent of blossoms, foreign leaf and gravel.—L. F. KEBLER.

Scammony Root. One importation gave 5.22 percent to 8.7 percent resin. Five importations were not scammony root but *Ipomea*, called Mexican Scammony at times. Resin from this source may have an action similar to scammony resin, but to represent a product as containing the drug when it does not, is an inexcusable deception.—L. F. KEBLER.

Scammony Resin. Eleven satisfactory lots gave 0.14 percent to 0.64 percent ash, 82.75 percent to 93.01 percent resin. One lot gave acid number of 55.7. Two lots invoiced as resin scammony gave acid number 19 and 28.75. Saponification No. 186 and 192.93. One lot invoiced as resin scammony was Gum Scammony. Three lots were low in resin. One gave 20.04 percent ether soluble resin and 3.86 percent ash.—L. F. KEBLER.

Scopola. Analysis of one lot gave 0.65 percent alkaloids; the other gave:

	Rhizomes	Roots
	93.7%	6.3%
Moisture	9.73%	7.63%
Ash	7.12%	7.66%
Insoluble Ash.....	0.37%	0.40%
Alkaloids	0.545%	0.43%

Twelve lots gave alkaloid 0.323 percent to 0.75 percent. Ash 5.85 percent to 6.62 percent. Moisture 4.3 percent to 10.3 percent. Two lots were somewhat mouldy.—L. F. KEBLER.

Senna, Senna Siftings. Persistent application of rigid requirements has accomplished what was declared impossible, the proper cleaning of this article so that it is capable of yielding a good galenical preparation, and this is what the shippers are now compelled to send here.—H. H. RUSBY. Seventeen shipments gave moisture 7.4 percent to 10.7 percent. Ash 5.6 percent to 11.8 percent. Extractive 41 percent to 48.2 percent. Two consignments invoiced as "Senna and Senna Leaves crude" were half leaf senna of good quality. They gave moisture 8.30 percent and 9.6 percent, Ash 11.9 percent and 12.5 percent, Extractive 45.3 percent and 46.3 percent. Two lots invoiced "Alex. Senna" and "Senna Leaves" should have been invoiced as "Broken Senna." One invoiced "Senna Leaves" was Senna Pods. Senna Pods are now substituted to some extent for the leaves. It is claimed by some that they are as active as the leaves. While there can be no objection to their use in medicine, they should not be used in place of leaves without its being known. Three importations were dirty with excess of foreign seeds. Ash 21.1 percent to 25 percent. Moisture 7 percent to 18.2 percent. Two of good quality gave: Moisture 8.2 percent and 8.27 percent, Ash 11.04 percent and 11.68 percent, Extractive 46.61 percent and 48.25 percent. Thirty-six lots of Senna leaves were of varying quality. Four were *Cassia lanceolata*, sometimes used as a Senna substitute. One of them was damaged in drying and infected with fungus. One lot contained 23.1 percent of stems, fragments of pods and seeds. Ash 17.8 percent. Some lots invoiced as Senna were Senna siftings, giving 7.45 percent to 8.9 percent moisture and 12.6 percent to 21.51 percent of ash. Standard senna leaves should not yield over 12 percent ash. Two lots of siftings gave 34.3 percent and 37.3 percent ash, 34.2 percent and 34.7 percent water extractive. Twenty-five other lots gave from 8.1 percent to 21.98 percent ash. In addition to the excess of ash this product frequently contained excess of stems, pods and seeds. Because these products were frequently used in pharmaceutical products without cleaning, it was found necessary to detain them until properly cleaned. Experiment by the department demonstrated that a 350 lb. lot assaying 17.5 percent ash passed through a combination gravity and sifting mill, removing the sand, gravel, seeds, stems, pods, etc., gave 65 percent of the weight of a satisfactory product yielding but 9.5 percent to 11 percent of ash. In view of these conditions it has been ruled that a satisfactory product must not give over 14 percent ash or foreign material other than ash in excess of 10 percent. Immense quantities of this product are imported annually and the importance of the problem is at once apparent.—L. F. KEBLER.

Simaruba Bark. One lot gave Ash 5.8 percent. Moisture 8.5 percent. Another gave Ash 16 percent. Moisture 8.8 percent. One lot was not *Simaruba*. The only resemblance is the color. It was probably a species of *Esenbeckia*.—L. F. KEBLER.

Smilax Rhizomes. One consignment was correctly labeled. The only use for this product is to adulterate *Sarasaparilla*. The pharmacopœia specifies that they should not be used, as they are worthless for medicinal preparations.—L. F. KEBLER.

Soap, Powdered. Guaranteed of extra quality. Not as white as usual. Does not make clear solution in warm alcohol and deposits on standing.—E. L. PATCH.

Soap Bark. Ash 9.1 percent to 10.23 percent, moisture 9.3 percent. One sample was an unknown bark resembling Soap Bark.—L. F. KEBLER.

Sodium Iodide. Contained 3.7 percent sulphate.—E. L. PATCH.

Sodium Phosphate.

1.79% Sulph.	1.52 Sulph.
2.9% Sulph.	0.88% Sulph.
2.58% Sulph.	free Sulph.
	trace Sulph.

E. L. PATCH.

Spearmint. Ash 9.7 percent to 12.42 percent.—L. F. KEBLER.

Spirit Camphor. Samples are still found defective, running from 40 percent to 83.3 percent of official strength.—MASS. B. OF H.

Spirit Nitrous Ether. Samples tested from no nitrous ether present to 74 percent of official.—MASS. B. OF H.

Spirit of Lemon. Samples found in which no lemon oil was present. Were solutions if citral.—MASS. B. OF H.

Spirit Peppermint. Samples found from 12 percent to 84.2 percent of official.—MASS. B. OF H.

Squills. Difficulty has arisen concerning the color of this drug. That of a brown color with a brown fracture is claimed to be of good, even superior quality, but it certainly does not conform to the official standard.—H. H. RUSBY.

Corn Starch. Slight alkaline reaction.

5 G.+ 25 cc. H₂O + phenolph = 1.1 cc. H₂ SO₄ N 10.
Slightly acid 5 G. = 1 cc. N. 10 K O H.
Slightly acid 5 G. = 1.1 cc. N 10 K O H.

E. L. PATCH.

Stramonium Herb. Six lots gave ash 14.7 percent to 19 percent. Thirty-two lots gave alkaloid 0.251 percent to 0.451 percent. One lot was low, 0.21 percent. One contained from 1 percent to 5 percent chestnut leaves. Assay—Ash 23.15 percent, Alkaloid 0.289 percent.—L. F. KEBLER.

Stramonium Leaves. One lot contained 10 percent of adulterant. Probably leaves of a species of prunes. Forty-three lots gave alkaloid from 0.294 percent to 0.49 percent. The alkaloidal standard (0.25 percent) may be a little low. One lot gave ash 20.5 percent, moisture 6.9 percent, alkaloid 0.294 percent. One lot gave 0.187 percent to 0.258 percent alkaloid.—L. F. KEBLER.

Strophanthus. The use of this drug must have declined greatly if we can judge by importations. Of late a new spurious species has been offered which is extremely difficult of detection, especially when mixed with an equal amount of the genuine.—H. H. RUSBY. Ash of one lot 10.4 percent, moisture 8 percent. Seven lots were satisfactory. One was false drug, either *S. asper*, or *S. grata*.—L. F. KEBLER.

Styrax. One lot not pharmacopœial. Contained but 48.73 percent of alcohol soluble material. Two satisfactory lots gave: Alcohol soluble 64.72 percent and 64.8 percent, Cinnamic Acid 21.3 percent and 25.56 percent, Cinnamein 45.5 percent and 59.47 percent. One lot gave 63.03 percent alcohol soluble, but only 1.54

percent of free and 3.93 percent of combined Cinnamic acid. One lot, not styrax but wholly spurious, had the microscopical character of an impure tomato paste.—L. F. KEBLER.

Tansy. Ash one sample 5.2 percent. One lot consisted of the entire herb, stem, leaves, flowers, etc. One chiefly of stems. The stem is virtually inactive.—L. F. KEBLER.

Thyme. Two lots excessively dirty. Ash 19.7 percent and 21.9 percent. One lot inferior, dark colored, mouldy and musty. Ash 16.5 percent. Two lots were origanum, one was wild marjoram and consisted of entire plant, including roots. Twelve lots were satisfactory, ash 7.4 percent to 14.14 percent.—L. F. KEBLER.

Tinct. Iodine. Thirteen local samples—1.97 G. Iodine to 6.06 G. to 100 cc. None up to standard. Variation 12.5 percent to 71.5 percent. Potassium Iodide lacking in four. Thirty-seven interstate samples—from 6.09 G. to 9.26 G. Iodine from 11 percent below to 35 percent above. No K I to 6.52 percent, from 100 percent below to 30 percent above.—L. F. KEBLER.

Tolu Balsam. Sixteen lots genuine and good quality gave—Acid number 93.5 to 126, Saponification number 170 to 318.2, Free Cinnamic Acid 11.84 percent to 41.44 percent, Cinnamein 4.68 percent to 9.9 percent. Thirteen lots of good quality gave free acid as benzoic 4.44 percent to 12.55 percent. Saponified resin 25.3 percent to 52.12 percent. Cinnamein 6.87 percent to 15.3 percent.—L. F. KEBLER.

Tragacanth. The offering of India gum under the name of Tragacanth has almost wholly ceased—H. H. RUSBY. One shipment labeled "Extra Superior" consisted in part, if not wholly of Hog Gum, which is not tragacanth. It was about No. 12 instead of No. 1 and sorts instead of superior. Ten percent of one lot was official. Twenty-three lots were satisfactory. One hundred and nineteen were too inferior for use in medicine. Six were India gum.—L. F. KEBLER.

Triticum. There have been occasional shipments, both whole and cut, of a thicker, paler, harder, tougher nearly tasteless grass rhizome under this name.—H. H. RUSBY.

Uva Ursi. Two lots very poor, contained over 83 percent of sticks, dead leaves and dirt. Four contained from 14.43 percent to 26.25 percent of foreign material. Three contained from 13 percent to 19.4 percent stem. Twenty-one lots were of good quality. One gave ash 4.69 percent, moisture 6.37 percent. Uva Ursi should not contain in excess of 10 percent of stems, foreign material or worthless leaves.—L. F. KEBLER.

Valerian. A number of shipments of Japanese Valerian have arrived. It has been hinted that this is not from *Valeriana officinalis*, but it is so clean and sound and fine in odor that it will require good evidence to show that it ought to be rejected.—H. H. RUSBY. One lot contained an excess of dirt. Ash 27.63 percent.—L. F. KEBLER.

Viburnum Opulus. Farwell, in the Bulletin of Pharmacy, has fully covered the situation concerning this drug, showing that there is no genuine bark of the kind in the market, all being acer spicatum.—H. H. RUSBY.

Wormseed. Ash 4.32 percent to 9.7 percent. One lot had lost much of its oil, but contained all of its bitter principle.—L. F. KEBLER.

Note. The contributions credited to Dr. Kebler are taken from department reports covering the years 1908, 1909, 1910, 1911 and 1912.

EDGAR L. PATCH,
LYMAN F. KEBLER, M. D.,
H. H. RUSBY, M. D.,
WILBUR L. SCOVILLE,
Committee on Drug Market.

DIET IN EPILEPSY.

"Freedom from epilepsy is often a matter of right living."—*Spratling.*

William Aldren Turner, the English authority, after exhaustive experiments, recommends the adoption of a purin-free dietary. The purin bodies, or substances constituted on a base $C_5 N_4$, are widely distributed among the common foods. They exist in all forms of meat extracts, in both the white and the red meats commonly used as foods, and in large quantities in certain glands, notably the thymus and pancreas.

Purin-free Foods. Recommended in epilepsy: Milk, eggs, cheese, butter, sugar, white bread, tapioca, rice, cabbage, cauliflower, lettuce, macaroni, strawberries, olive oil, honey, apples, grapes, nuts, raisins, dates.

Purin-poor Foods. Potatoes, onions, oatmeal, French beans, turnips, carrots, parsnips, rhubarb, kale, chicory, figs, the pulses, asparagus, codfish.

Purin-rich Foods. To be avoided in epilepsy: Salmon, halibut, plaice, beef, pork, mutton, chicken, veal, liver and sweetbreads.

If the patient shows loss of weight under a purin-free dietary it is advisable to give fish, or even lamb or mutton, occasionally.

Aged persons, whose digestive glands are atrophied, are unable to digest food which presents great difficulties to the action of their juices. Therefore raw milk, whipped eggs, tripe, lamb, rice, sago, tapioca, barley and soft-boiled eggs are the most digestible foods for them.—*Arnold Lorand, Old Age Deferred.*

Section on Scientific Papers

Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS—THE DETERIORATION OF PHARMACEUTICAL PREPARATIONS.

FRANK R. ELDRED.

The standardization of galenical preparations is such a well worn topic that I hesitate to refer to it in this connection, yet it is the logical starting point in the consideration of their stability.

The adoption of standards for these products marks the most important ad-



FRANK R. ELDRED, Indianapolis, Ind.,
Chairman Scientific Section, 1912-1913.

vance which has been made in their manufacture. Before such standards became possible many years had been devoted to the analysis of drugs; and later to the development of assay methods for determining the active principles which had been found. It is almost needless to say that an apparently unlimited amount of work yet remains to be done in both these fields. Our knowledge of the chemistry of many important drugs is so slight that we cannot even attempt

to develop chemical methods for their standardization; other drugs whose chemistry is better understood cannot be accurately assayed because suitable methods for this purpose have not been devised, and moreover, when we examine the assay processes which are in general use we find many imperfections. Steady progress has, however, been made in the development of methods and apparatus for assaying drugs and today the manufacturer may find that he is forced to use a process which he knows to be inaccurate because it was perhaps the best available when the Pharmacopœia gave it a legal standing. It is obvious that standards could not be established until fairly satisfactory assay processes had been agreed upon. The immediate effect of such standards was much greater uniformity in the strength of preparations standardized, for although the methods were not perfect and results not always as accurate as they should have been, yet the first serious attempt was being made to bring about uniformity and variations in strength became almost negligible.

After certain standards and methods had received official recognition the question of the stability of the standardized products began to receive attention. Previous to this time chemists engaged in this line of work had been so busy developing the assay methods, without which, deterioration studies could not be made, that no systematic investigation of the changes which might occur in such standardized products after their manufacture, had been undertaken. Many persons, forgetting the years which had been consumed in acquiring our present knowledge of drugs, seemed to think that it would be a simple matter to determine once for all the degree of stability of these preparations and investigations and discussions of this matter became the fashion. So much has been said and written that it was thought desirable to summarize our knowledge of the subjects, but a review of the literature, so full of contradictory "conclusions," seems to render this impossible except in the most general way. Even the results of investigations in many cases show the widest variance, for instance one chemist finds that some lots of fluidextract and tincture of cinchona show deterioration, while other chemists who have examined many lots of these preparations have found no evidence of deterioration. The occasional precipitation of alkaloids from cinchona preparations may be due to differences in the drug used, or to the conditions of manufacture and storage and only a careful study will determine the cause of this deterioration so that steps may be taken to prevent it. It is safe to say that in more than one laboratory, studies are being made with this end in view. We may confidently expect that whenever products are found to deteriorate every effort will be made to overcome this difficulty, and the fact that most of these preparations are so stable encourages the belief that in nearly all cases deterioration can be practically eliminated. Fluidextract of coca which is fortunately of little importance is the only fluidextract which has been uniformly found to deteriorate. Indeed the only general conclusion which can be drawn after a careful consideration of the literature is, that as a class galenical preparations are surprisingly stable. It is extremely unfortunate that a few writers acting as alarmists have tried to show that the reverse is true and I wish to call attention to some of their statements. We have been told that fluidextract of ergot is worthless after it is six months old, yet the clinical reputation of ergot in this country was probably largely established by the use of a fluid-

extract which the manufacturer aged for one year before bottling. The most careful studies of this preparation have failed to show any loss of strength in two years and it is difficult to say at this time how much longer it can be kept without deterioration as this can only be definitely determined by further aging tests. Very old samples of the crude drug have also been shown to be of average activity despite the more or less prevalent opinion that such drug is worthless. Again a recent writer in one of the pharmaceutical journals making use of the data of various investigators has arrived at some conclusions differing materially from those of the original authors and in no way justified by the data presented. This writer says that fluidextracts of ergot and digitalis should not be relied upon when over six months old, although no evidence whatever is offered in support of this statement. He also states that physicians should discard "as far as possible" all fluidextracts which are over two years old, while the data presented could in no way lead to this conclusion. Some manufacturers also have made capital of reputed deterioration to call attention to special means of preserving drugs from influences which have not definitely been shown to affect them. For instance, patents have been issued on a process for destroying the hydrolytic enzymes which cause the deterioration of digitalis preparations, and other special methods for preserving crude digitalis and its preparations have been exploited; yet Hatcher* has recently shown that fluidextracts at least twenty years old show no evidences of deterioration, while the crude drug preserved with ordinary care has been proven to be perfectly stable, thus rendering unnecessary any of the special methods of drying or preservation. Although Hatcher's results may not be taken as final, his careful work certainly shows how ridiculous it is to try to explain the cause or devise means for preventing deterioration which is not known to take place. This brings us back to the consideration of accuracy in methods of valuing drugs, for other investigators, using methods different from that employed by Hatcher, have fixed upon various rates of deterioration for fluidextracts and tinctures of digitalis. I have reminded you of our scant knowledge of the chemistry of many important drugs and of our imperfect chemical assay methods and these statements apply also, perhaps in less degree, to our knowledge of the pharmacology of many such drugs and in an even greater degree to the physiological assay methods. While we are attempting to study the deterioration of such drugs as ergot and digitalis by diverse methods upon which pharmacologists are not yet in accord we must not therefore allow ourselves to draw too definite conclusions. If conservative in this respect, we can acquire much valuable information from these studies in regard to the methods used as well as to the stability of the preparations. We cannot expect the same degree of accuracy in physiological methods that has been attained in chemical methods on account of the unavoidable variations in the animals used and also from the fact that it is a comparatively short time since physiological methods were first used for the standardization of drugs. No single method should be relied upon and results upon only a few lots should not be accepted as evidenced by the results on fluidextract of cinchona which have been cited. With these facts in mind an impartial study of the literature

*Journ. A. Ph. A., July, 1913, p. 876.

can lead only to the conclusion that there is no positive proof, with one or two important exceptions, that galenicals deteriorate in any serious degree.

Such important advances have been made in the manufacture of galenicals that the members of the pharmaceutical profession may well congratulate themselves upon this fact instead of agreeing with one of our friends who, upon the basis of his studies of ergot deterioration has depicted the situation as "horrible." I would by no means have you infer that I think we should be satisfied, for on the other hand I believe that it is the duty of any one engaged in the manufacture of medicinal preparations to strive with all the means at his disposal to improve both preparations and methods for testing them.

It has recently been very popular to advocate the dating of pharmaceutical products, and certainly no one will deny that this should be done whenever our knowledge is sufficiently exact to establish a period after which the preparation should not be used. Until this can be done nothing could be more illogical than to date such preparations. For example it has frequently been urged that digitalis preparations should be dated, yet Hatcher's work seems to have established the fact that these preparations will keep twenty or thirty years; what can be accomplished then by dating them? Surely preparations older than this will not be frequently used! If the dates of manufacture are placed upon preparations when no definite knowledge in regard to their keeping qualities is available, who shall decide when these preparations must be discarded? One writer who advocates placing the date of manufacture on certain preparations says that while it is very difficult to set a definite time limit on a preparation which deteriorates, yet the dating of such preparations enables the pharmacist to use his expert judgment as to whether or not a preparation is too old to be used. If this knowledge is not available to the manufacturer, where can we expect the dispenser to obtain the information? The answer is clear; the fact of deterioration must be determined from the preparation itself and not from any date appearing on the label. The fact that where deterioration occurs, different lots will deteriorate at very different rates, cannot be too strongly emphasized; this is due no doubt to differences in the preparation itself as well as to conditions of storage. If galenical preparations are not protected from extremes of temperature and from direct sunlight, and are not stored, well stoppered, in amber bottles more rapid changes must be looked for in the preparations. Differences in various lots of the same preparation and even in different bottles of the same lot are seen in a marked degree in solution of hydrogen dioxide, so that any time limit which could be established would, therefore, have the disadvantage of being too near in some cases and too remote in others, and the same condition will be found to exist with other preparations which deteriorate. It might be urged, that until we can absolutely demonstrate that a preparation does not deteriorate at all during a long period of years, we should give the consumer the benefit of the doubt and require the manufacturer to date his packages, but the fallacy of this argument is easily seen when it is considered that most of our information points to the great stability of such products and that if the pharmacist was arbitrarily required to discard preparations of a certain age the consumer would ultimately have to pay for this uncalled for waste. The careful pharmacist will in any event turn over his stock of pharmaceuticals

as rapidly as possible both for the purpose of keeping his stock fresh and to increase his financial gains; in this he is certainly to be encouraged.

Although there can be no doubt that deteriorated products have been dispensed and will be dispensed in the future, conditions are rapidly improving and, indeed, have never been as serious as many writers lead us to believe. It is undoubtedly true also, that improvements in manufacturing processes will keep pace with improvements in analytical and pharmacological methods, so that as fast as the fact of deterioration can be established, steps will be taken to overcome the difficulty. Let us not forget that even though methods are imperfect and preparations may occasionally deteriorate the resulting variations in strength will in most cases be much less than the variations which would occur in unstandardized preparations. We are therefore making good progress and a little patience only is required until the bugaboo of deterioration will be, in one way or another, overcome.

DISAPPEARING DISEASES.

Dr. Guilfoxy, the Registrar of Vital Statistics of New York, has recently published some interesting figures from former records showing what modern methods have done in the way of abolishing certain diseases. Asiatic cholera was formerly a frequent visitor to the city, there being 5,000 deaths from this scourge in Manhattan and the Bronx in 1849; 2,500 in 1854; and 1,100 in 1866. During the last thirty-six years there have been only 11 deaths from this disease. Typhus fever was prevalent from the year 1868 onward, there being 200 deaths attributed to it in 1893. If the same death-rate from malarial fever had prevailed in 1912 as in the period from 1880 to 1890, there would have been 1,400 deaths from this cause; the number that actually did die from it was 20. The most striking conquest has been made in the case of smallpox which was practically always prevalent prior to the year 1876. Since that time the epidemics have become milder and of shorter duration until last year there were only two deaths from this disease in a population of over 5,000,000 people.—*Journ. A. M. A.*, V. LX, 842.

Section on Education and Legislation

Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS.

WILBER J. TEETERS, IOWA CITY, IA.

There are two great problems before American pharmacy today—Education and Legislation.

There are to be sure other problems that press for solution and which to some may seem to be of equal importance, but the basis of progress must come through education in the broad sense of the term and sane legislation.



WILBER J. TEETERS, Iowa City, Ia.,
Chairman Section on Education and
Legislation, 1912-1913.

The influence of the work of this section is most important in helping to create the proper attitude towards education and its needs and the influence it exerts in moulding public opinion so that it is possible to enact reasonable and just pharmacy laws throughout the various states.

By education we do not mean simply the work done by colleges of pharmacy in the training of pharmacists, but the general increase of knowledge of medical

and pharmaceutical subjects gained through journals, magazines, science courses in our public schools and colleges, pure-food laws, the publicity of the American Medical Association of nostrums and quackery, the demand for truthful advertising and many other sources open today for general education in these and kindred subjects to the reading and thinking public.

The day of mysticism in medicine and pharmacy is past and the Jovian symbol is no longer regarded as a prayer to unknown Gods but is taken as it should be—a command to the pharmacist to put up the following ingredients of U. S. P. standard of purity and strength, and that the preparation is not in most cases a panacea but meant simply for temporary relief or to aid nature in regaining normal health.

The general education of the public has had its influence upon the profession and it should be the duty of every college of pharmacy and every true pharmacist to aid in this general uplift.

The faculty of any college today that think they have done their full duty after instructing in pharmacy, chemistry, botany, materia medica and pharmacognosy, have fallen far short of their duty to themselves as educators and their duty to the college and general public.

The curriculum of the modern college includes the subjects of pharmaceutical mathematics, physiology, bacteriology, pharmacodynamics (which includes the physiological testing of drugs and toxicology), prescription writing and dispensing, urinary analysis, business accounting, and last but not least, the science of salesmanship.

This is not all that should be expected of the college of pharmacy, for the faculty should be of aid and assistance to the people of the state; especially is this true should the college be a part of a state institution, and aid in county, district and state organization, furnish popular and scientific lectures before clubs or other organizations, and do analytical and research work in the interest of science, and help to solve the economic problems of the people.

This may seem to be putting a great and burdensome responsibility upon the colleges, but it is a responsibility the colleges should and must meet if they do their full duty.

The higher demands being made in medical education is having an influence upon colleges of pharmacy.

It is generally conceded that our national educational standard for entrance upon pharmaceutical work is too low to furnish the necessary basis upon which to build the scientific training that a really competent pharmacist should have for his work.

The colleges of pharmacy that have advanced their entrance requirements and courses beyond the mere requirements of the Conference are to be commended, for in most cases it has meant a shrinkage in attendance, at least temporarily, and in some cases pecuniary loss.

The objection, in the main, of institutions not wanting colleges of pharmacy included in the Carnegie Foundation investigation list is due to the fact that they fear the result of the report that would follow. Some of our colleges of pharmacy would be put out of existence just as some of the medical colleges were, and for the same reason.

No college of pharmacy that is not endowed or does not receive state support can honestly give the high degree of technical work that should be given, except at a loss, from tuition alone. The equipment necessary and salaries that must be paid for thorough and competent instruction makes it an impossibility at the present time.

I predict that the Carnegie Foundation investigation will come whether we ask for it or not. It is to be expected that the weak schools will raise an objection, but the "fly in the ointment" is the inevitable result that is sure to follow, just as it did with the weak, poorly equipped medical schools and diploma mills of a few years ago.

The character of the instruction given in some of our colleges of pharmacy might certainly be improved. There is evidence of inbreeding by recruiting the teaching staff from the same institution.

New blood is more likely to bring new ideas and a more progressive spirit into the work. I do not at all mean that a good instructor may not be found occasionally among your own graduates, but to build up an entire faculty in this way is, to say the least, a dangerous proposition for results.

Our pharmacy colleges need live, wide-awake men of high ideals who have the ability to teach. Men who by example and precept instill higher and loftier ideals into the students with whom they came in contact, and by this association make of them better and nobler citizens and pharmacists than they otherwise would have been.

Some one has said that teaching is an interesting art, as it has so many degrees of success, but Roosevelt says that teaching that does not include efficiency, success and service, has no rightful place in education today.

Such is the responsibility of the college and its faculty, but the druggist has an equal responsibility, for the apprentice and clerk that you employ today will be the proprietor of the drug store within a few years.

How about the quality of the men that you are taking into your business? Are they clean, conscientious, capable fellows with scientific knowledge of the profession that will command respect or are they fellows who, for the most part, have been promoted from errand boys or soda clerks, with little or no high school training? These are simply questions to bring your responsibility forcibly to mind.

The enterprising and conscientious pharmacist should keep posted upon patent and proprietary remedies and free prescription fakes and tell the truth about them.

The drug journals, and there are many good ones, should have due credit for the work they are doing in general education.

The syllabus committee has been an entering wedge that has shown up weak spots in our curriculums and its value cannot be overestimated, but its best work is to follow.

The commercializing of pharmacy in some sections by the stocking of everything from canary birds to umbrellas, has caused much comment and chagrin to the ethical pharmacist. The result is hard to predict, but it would seem reasonable to suppose that the public would not expect to receive the highest class of service professionally in the drug line from a cafeteria.

Professional pharmacy is not lost because a few prefer to conduct a restaurant.

The so-called detail men of the manufacturing houses are responsible in a large degree for the doctors filling their own prescriptions, and this presents an interesting educational problem for both the physician and the public. The dispensing doctors' stock should be inspected by law and required to meet the same standards as your drug stock. This would eliminate some of the difficulty.

The address of my predecessor upon legislative subjects was so thorough and well prepared that I hesitate to reopen the subject. Suffice it to say that the movement for honest advertising should receive all possible support from the pharmacist. The pharmacist is a busy man and we, as a class, have given too little attention to legislative matters. There is an old saying that if you want a drink, you should go to the head of the fountain yourself. The pharmacist has too often entrusted too much to some one else. He has sent a substitute when he should have gone himself.

It is absolutely certain that just, reasonable and sane laws for the protection of the pharmacist and public can be enacted if the members of this honorable profession will unite their efforts and create the proper public opinion. This means personal and united effort, backed by an organization modeled after such a plan as the American Medical Association.

Organization should be the slogan, and every man should stand willing to do his part in bringing to a respected and honorable profession its just dues.

I have outlined no Utopian dream. It may be charged that I have dealt in idealism, but idealism backed by push and energy, and combined with sane judgment, can accomplish things worth while. Will we measure up to the task before us?

I have but this recommendation to make: That we favor the passage of honest advertising laws and urge that colleges of pharmacy extend, within reasonable limits, their sphere of usefulness to include the great field of general education and public service.

HIT-AND-MISS MEN.

The world is jammed full of bunglers—of hit-and-miss men who use their heads for everything except thought—who confuse random ambition with capability. Wherever you turn, you can jab your elbow into some incompetent weakling proclaiming the existence of a "universal handicap"—but no sane man—no determined, industrious, thinking human ever finds the scales of Justice dishonest.—*Herbert Kaufman.*

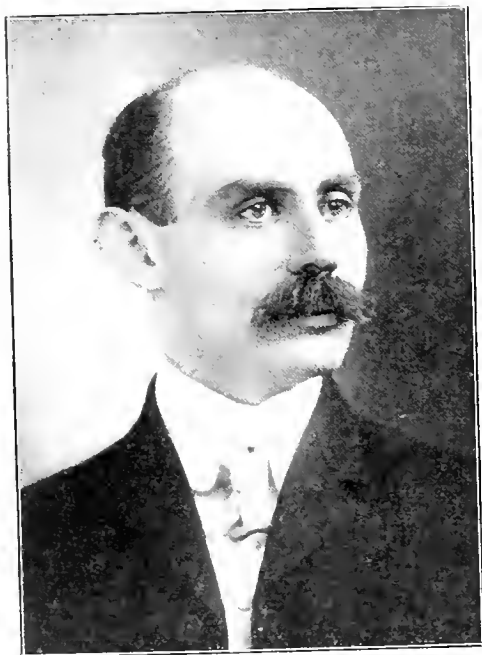
Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS.

J. LEON LASCOFF, NEW YORK.

Allow me at the outset to thank you for the honor bestowed upon me in electing me chairman of this Section at the Denver meeting, although circumstances beyond my control prevented my attendance at that meeting. More especially do I appreciate this honor, since I served but a short term in the capacity of an associate, and I feel as proud as the school boy who has skipped a class.



J. LEON LASCOFF, New York City,
Chairman Section on Practical Pharmacy
and Dispensing, 1912-1913.

However, when I accepted the honor, I did not realize the enormity of the work on hand, the extreme responsibilities and the strenuous labor required to bring to a successful issue such an important event as the one we are now enjoying.

My earnest requests for papers have been generously responded to, and I cannot properly express my appreciation for the efforts of these worthy members who have contributed so liberally to the success of this occasion.

In past years, the chairmen of this Section have outlined to you the past history and prevailing conditions, and have set forth many suggestions for the future welfare of practical pharmacy. I will not attempt to appear to you in the light of a historian nor assume the role of a prophet, for who knows what destiny has in store for us? But I may add that in the last two decades close observation teaches me that American pharmacy is not going backward; but that on the contrary, it has made rapid strides in the opposite direction. My associate, Mr. Osseward, in reply to the question, "Is American pharmacy going backward?" answered that American pharmacy is not going backward in pharmacies, but in drug stores, and said, "Let us have more pharmacies and fewer drug stores."

During the life of the retail pharmacist, conducting his store for the purpose of making his livelihood, many interesting conditions present themselves from time to time, which awaken in him the desire to assist in the reform of what seems to him to be flaws in his profession. If he has the interest of his calling at heart, he makes note of the so-called errors, profits by them, writes them down and presents them to his fellow pharmacists at the meetings of the local association, or at a general conference like this, where all may share in the benefits of his experiences. For that reason do we meet annually from all parts of the United States to listen to the papers presented, enter into general discussions, and so sum up our ideas regarding the changes that must necessarily take place as civilization progresses. This is the purpose for which this Section on Practical Pharmacy and Dispensing was organized, and we are now celebrating its fifteenth anniversary.

Licensed Pharmacists Owners of Stores. There is no doubt in the mind of every one present the belief that certain radical changes must be effected if the future standard of pharmacy in general shall not be jeopardized. Especially is this true in the large cities, where we have five types of drug store owners:

1. Legitimate licensed pharmacists.
2. Corporation stores.
3. Undergraduate students of pharmacy.
4. Ordinary laymen who invest their capital for money-making.
5. Large department stores.

I need not go into detail; my hearers know only too well what the developments of the last five years have meant to us in these particulars.

In this connection, I have my first suggestion to make as to the means of safeguarding pharmacy against the continuance of what bids fair to assume enormous, and I may say, hazardous proportions. The remedy, to my mind, seems very simple, namely, that by law in every state of the Union, the owner of a pharmacy or of a store where prescriptions are compounded and poisonous drugs sold, be required to *be a registered pharmacist*. In 1912, Dr. Geo. C. Dickman read a very interesting paper on the same subject. A resolution to the same effect was adopted by the New York State Pharmaceutical Association, at the meeting held at Catskill, N. Y., June 24, 1913. It read as follows:

"No one but a licensed pharmacist shall be the owner of a pharmacy."

In small towns or villages, the legislature should eliminate the groceries or general stores from handling poisonous or deleterious drugs and chemicals.

Weights and Measures. Unfortunately, many pharmacists today are not in possession of the most necessary paraphernalia for the conduct of a first-class prescription pharmacy. It is difficult to believe, but true that, while some stores present an elegant appearance, fine fixtures and a most elaborate fountain, it will be found upon examining their prescription departments, that they do not possess the most essential weights and measures. Instead of using an ounce troy weight in the compounding of a prescription, as called for, an ordinary avoirdupois ounce is used. When metric weights are required, they convert one system into the other.

I have called the attention of the New York State Board of Pharmacy to this condition, and a regulation has been adopted to meet the situation. This ruling compels every pharmacist to have at least one *accurate* balance scale and a certain number of accurate certified weights and measures. Before any pharmacy can be registered in New York State, the proprietor must fill out a blank and swear before a notary public that he is in possession of

One (1) base scale capable of weighing one grain or less.

One (1) set of metric weights from 50 mgm. to 20 gm. A set of graduated measures, two or more in number, capable of measuring from 10 minims to 16 fluidounces. A set of glass, graduated measures, from 5 cc. to 500 cc.

One (1) set of accurate troy weights, from one grain to two drachms.

Sanitation of Pharmacy. As it is necessary to have absolutely pure drugs and clean utensils in pharmacy, so it is just as essential to have sanitation in the prescription room. Healthy, pleasant surroundings work wonders in the way of producing perfect results. The prescription room, above everything else, should be kept strictly clean and sanitary, and should have good ventilation. No sleeping accommodations should be allowed in the prescription room.

Separating the Pharmacy from the Drug Store. In the May issue of the Journal of our Association, a Canadian druggist is quoted as making the following statement: "I do not cater to the prescription business. It does not pay at the prices we get and the time required to compound them. I can do more business and make more profit by keeping my clerks busy selling merchandise and my own-make goods."

I do not agree with this pharmacist. I find that prescriptions pay very well, if you take care in compounding them and gain the confidence of your patrons. If the druggist quoted does not care to bother with a prescription department, he should send his prescriptions to one who makes a specialty of this line of work, and thus be fair to his patrons and just to his profession.

In 1911, while I was chairman of the Committee on Professional Relations of our local branch, a joint meeting of the Medical Society of the County of New York, and the A. Ph. A. was held. Dr. Walter A. Bastedo presented a paper at that meeting in which it was suggested that pharmacies should be certified. Dr. Jacob Diner made a motion to that effect, which was unanimously carried, and it was then decided that there be a joint committee consisting of ten physicians from the Medical Society of the County of New York, and ten pharmacists from the New York Branch of the A. Ph. A., to consider this matter. Mr. Otto Raubenheimer, in his address as chairman of this Section, at the Richmond meeting, also took up this idea and discussed it in detail.

Henry P. Utech, in his address to the Section at the Denver meeting, last year, added his endorsement of the movement, and stated that "the pharmacists of the Metropolitan City deserve our hearty approval for taking the initiative in this direction."

The joint committee above referred to was appointed, but up to the present moment nothing has been accomplished.

To justify the certification of a pharmacy as sufficiently equipped, I suggest that it should be required to possess the following essentials:

1. The owner of the pharmacy shall be a licensed pharmacist.
2. The prescription department shall be separate from the store.
3. The sale of liquors shall be absolutely prohibited.
4. Proper ventilation and sanitation shall be strictly observed.

The minimum outfit of apparatus and utensils should consist of the following:

- 6 mortars and pestles (porcelain).
- 2 glass mortars with pestles.
- 3 porcelain evaporating dishes.
- 6 spatulas of different sizes (metal).
- 2 horn or 1 bone spatula.
- $\frac{1}{2}$ dozen glass rods.
- 1 infusion mug.
- 1 dozen assorted graduates (from 1 dr. up to 1 qt.).
- 1 dozen assorted graduates (from 50 cc. to 1000 cc.).
- 1 base scale (accurate) capable of weighing 1 gr. or less.
- Troy and Metric weights (complete) from 1 gr. up to 12 oz., from 10 milligrams to 1000 grams.
- 2 separate poison closets (A and B).
- 2 tablet moulds (trit. and hypod.).
- 2 Florentine flasks.
- 2 sieves.
- 1 copper water bath.
- 2 percolators, funnels of different sizes, supports, etc.
- 1 microscope
- 1 sterilizer
- 1 centrifuge
- 1 dozen test tubes.
- A special closet for the most important U. S. P. reagents.
- 1 burette.
- 1 outfit for urinalysis.
- 2 hydrometers.
- The U. S. P. and N. F. and other books of reference.

Just as a good mechanic cannot work without his necessary tools, so a pharmacist cannot do his work properly without this essential paraphernalia.

Owing to the fact that many errors are made by persons taking internally medicines intended for external use, all bottles containing dangerously poisonous substances should be dark colored, and preferably of a triangular shape, to distinguish them from the other bottles containing substances for internal use.

All present at this meeting will agree with me that any one who wants to conduct a pharmacy with an ideal prescription department, should be in possession of at least these most essential utensils.

The expense required for the proper equipment of a pharmacy for professional work is not to be considered when compared with the enormous outlay for an elaborate fountain, glass mirrors, beveled glass cigar counters, silent salesmen show cases, and other lines of fine fixtures.

I would suggest that a special certificate of the A. Ph. A., signed by its president and secretary, and endorsed by a committee of local branches, both

medical and pharmaceutical, be issued to such of its members as conduct properly equipped pharmacies, the certificate to be revokable when the pharmacist violates the pharmacy law or any of the rules of professional ethics.

I hope that the foregoing suggestions will appeal to the members present and also to those of our associates who are absent, for I believe that great things can be accomplished in the sphere of practical pharmacy if we will all put our shoulders to the wheel and help to effect the changes which have been suggested, and which will assuredly tend towards the uplift of our profession.

THE LANGUAGE OF ADVERTISING.

What is advertising? It simply consists in telling somebody about something you have for sale, with a view to getting his custom.

If you wished to tell an acquaintance about your good soda water, you would not approach him attired in a blue wig and walking on your hands. That method of approach would probably get his attention, all right, and it would probably also excite his apprehension. You would simply get hold of your friend and tell him in a few plain words about your good soda water. The points about it that appealed to you would probably be the points you would pick out with which to impress him.

You would not say: "Now this soda water of mine is the very finest beverage that the world ever knew. The nectar of ancient Olympus was slush beside it, and Cleopatra never tasted anything half so good in her life. My vanilla bean is imported at an enormous expense from Timbuctoo, and the Czar of Russia is unable to duplicate it."

No; that language would be flowery and extravagant. You probably would not use it to your friend. You would tell him instead, in your own words, that you were buying fine materials, manufacturing under sanitary conditions, and turning out a really good article of soda water. You would not tell him this in an indifferent manner. You would be earnest. And that is what a successful advertiser must always be. Now you cannot spend your life button-holing friends, nor can you button-hole strangers very well. Advertising does this for you. That is what advertising is for. It enables you to talk to a thousand men, ten thousand, an hundred thousand. You will find that the newspaper or magazine you use makes much of its circulation, that is, the number of people it enables you to talk to, and charges you accordingly.—*H. S. Adkins in National Druggist.*

Section on Pharmacopœias and Formularies

Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS.

L. B. HAVENHILL, LAWRENCE, KAN.

At this first meeting of the permanent Section on Pharmacopœias and Formularies, it is fitting that we review its reasons for existence, discuss its possibilities, and take a general survey of its relations to the pharmaceutical profession.

From the very first the American Pharmaceutical Association has taken an active interest in all matters pertaining to the United States Pharmacopœia. This interest was first officially manifested by the appointment of a standing



L. D. HAVENHILL, Lawrence, Kan.,
Chairman Section on Pharmacopœias and
Formularies, 1912-1913.

committee known as the Committee on the Revision of the United States Pharmacopœia. The name of this committee was in 1905 changed to the Committee on United States Pharmacopœia, and its membership increased to ten.

The fact that forty-two of the fifty members of the National Revision Committee are members of this Association, serves to still further emphasize this interest and responsibility.

The increasing importance of the United States Pharmacopoeia in pharmaceutical circles has made it imperative that additional time at the annual meeting be given over to its discussions. This fact was first brought to the attention of the Association at the Boston meeting, in an article contributed by our lamented member, Dr. Oscar Oldberg, entitled, "A Few Questions Suggested by Comparisons of the National Pharmacopœias" (Jr. A. Ph. A., 1912, Vol. I, No. 2, p. 149-150). He states "The Pharmacopœia and its full and free recognition and use are so important to the American Pharmaceutical Association and to all pharmacists, that a special section called 'The Section on the Pharmacopœias' should at once be created. Such a section is of greater importance than any other, and we should have started it earlier." * * * He adds "The Pharmacopœia should no longer be a side issue of some other section."

Suiting the action to the words, Dr. Oldberg, in a communication to the Council (Bul. A. Ph. A., 1911, Vol. VI, No. 1, p. 573), submitted a proposal that such a section be created. This communication was referred to a committee of three, consisting of Messrs. Clark, Kremers, and Eberle, who later recommended to the Council (Bul. A. Ph. A., 1911, Vol. VI, No. 1, p. 588), that "The Committee of the U. S. P. be authorized to hold a special session independently of the Scientific Section, or any other section, at the time of our next annual meeting. Should the experiment prove a success, the authorization for the establishment of the section may be granted at a subsequent meeting." Secretary J. H. Beal thereupon moved that "The recommendation be modified to include the Committee on National Formulary, and that the committees on the United States Pharmacopœia and National Formulary be authorized to hold one or more joint sessions at the next annual convention." The motion carried. Since the National Formulary is wholly due to the work of this Association, and since it has equal legal standing with the United States Pharmacopœia, it is, if such a thing be possible, nearer to the hearts of the members of the Association than the Pharmacopœia itself, and should be given equal consideration.

At the Denver meeting of the Association the Council (Jr. A. Ph. A., 1912, Vol. I, No. 1, p. 1104), appointed a Chairman and Secretary and the joint session of the two committees was held. (See minutes Jr. A. Ph. A., 1912, Vol. I, No. 2, p. 1220-1227). The Council passed favorably upon the work of the two committees, defined the scope of the section and appointed a Chairman and Secretary, at the same time authorizing these officers to appoint three associates for the ensuing year. Thus came into existence the Section on Pharmacopœias and Formularies. (Jr. A. Ph. A., 1912, Vol. I, No. 10, p. 1116).

The scope of this Section as defined by the Council was as follows: "That all the work of the Association pertaining to Pharmacopœias, National Formulary, Unofficial Standards, and to food and drug standards generally, so far as they come before this Association, be considered by this Section in the future."

The Chairman believes that it should be the work of this Section to encourage full and free discussion of the United States Pharmacopœia and National Formulary and to endeavor to harmonize in them, in so far as it is possible, the mutual interests of the Physician, Pharmacist and Food and Drug Chemists.

The physicians may be said to regard these books as expressing their collective

ideas of the kinds and strengths of remedial agents used by them in their practice.

The pharmacists may be said to regard them as guide books for the preparation of medicines, to meet the requirements of the physicians.

The food and drug chemists may be said to regard them as works containing standard methods whereby the integrity of the pharmacist's work may be judged.

With the enactment of the Food and Drugs Laws, the Pharmacopoeia and National Formulary have become works of peculiar significance to a new class of scientific workers, the food and drug chemists. The great majority of these are not trained pharmacists, but are chemists, and as such they regard the U. S. P. and N. F. in quite a different light from that of either the physician or pharmacist.

It is to be hoped that the physicians and the food and drug chemists will avail themselves of the opportunities offered by this Section to come into closer contact with the pharmacists, that each may gain greater respect for the other's point of view, with the ultimate result of securing the greatest good for the greatest number.

To the end that cooperation may be assured, it is recommended that besides the Chairman and Secretary of the Section, there shall be eight associates, three active and five honorary. The three active members shall be elected annually and shall be those regularly engaged in the practice of their profession. They shall be a physician, retail pharmacist, and food and drug chemist. The five honorary associates shall be:

1. The Chairman of the National Committee of Revision of the United States Pharmacopoeia.
2. The Chairman of the Committee on National Formulary.
3. The Chairman of the Committee on Unofficial Standards.
4. The Chairman of the Committee on United States Pharmacopoeia.
5. The Chairman of the Committee on Recipes.

It shall be the duty of the active associates to report to the Association through this Section, at each annual meeting, matters pertaining to this section as voiced by the several interests represented by them.

It is further recommended that one of the regular duties of this Section be that of compiling as rapidly and completely as possible, a list of the Pharmacopoeias and Formularies of the world, and of keeping the same up to date.

Contributed and Selected

STATE BOARD OF PHARMACY EXAMINATIONS.*

H. C. CHRISTENSEN, CHICAGO.

At the meeting in Denver a year ago a resolution was passed authorizing the appointment of an Advisory Committee of three to investigate the status of examinations among the various State Boards of Pharmacy, with the end in view of determining the conditions under which reciprocal registration among them could be furthered.

Mr. Charles Geitner, of the Missouri Board of Pharmacy, Mr. E. L. Brandis, of the Virginia Board, and myself, representing the Illinois Board, were honored by appointment upon this committee. I was doubly honored and greatly obligated by being chosen its chairman. Representing my fellow members, it now becomes my duty, as well as my pleasure, to report to you the results of our work.

At the risk of provoking your impatience at delay, we are moved to observe here that, in our opinion, the action of this body in adopting the Dodds resolution, looking to the establishing of general reciprocity, will mark an epoch in pharmaceutical progress in this country for the present century, not alone as a piece of legislation national in its scope, but as a basis upon which the entire profession will be elevated. For just as soon as you bring men together from different sections of a great commonwealth to discuss a common subject, to exchange ideas, to promote a common cause, just so soon will the cause in which they are interested be raised above the common level. The art of printing, ready and rapid means of travel, the telegraph and telephone—all hailed as the great promoters of civilization—were and are such only because they make the easy exchange of ideas among men possible. The struggle for a standard of qualification upon which general reciprocity may be based will serve to crystalize our ideas of what our profession should be, will modernize methods and standards long since antiquated, and will aid in putting the ancient and honorable profession of pharmacy in the front rank of the scientific professions, where it rightfully belongs. It is needless to add that the great public, by whose grace we exist, and for whose benefits our efforts should be maintained, will profit thereby.

It will do no harm to note, in passing, that this is the first of the scientific professions to take such a tangible step to abolish state lines in the legal recognition of its qualified membership.

Since its appointment, your Committee visited several of the state boards during their examination periods to observe the work of each board, study its questions, note the method of conducting its examinations and to determine as

*Report of Advisory Examination Committee National Association Boards of Pharmacy.

far as possible how much of the work of any given board might be suitable for all boards, or rather to determine what changes, if any, might be necessary to make the work of any board acceptable to the other boards on a reciprocal basis. Your Committee also studied the published questions of boards not visited. It is to be regretted that, for lack of time as well as lack of funds, only the following could be visited: Illinois, Missouri, Nebraska, North Dakota, Ohio, Virginia, West Virginia, Kansas, and Arkansas. It is to be hoped and expected, of course, that in the future work of this Committee all the states may be visited.

Now, it needs no argument to convince you that before reciprocity can be permanently or satisfactorily established, the qualifications upon which registration is based must be fairly uniform and acceptable to all the states. As in practically all the states registration is based upon examination, the attention of your Committee was directed to the subjects embraced in the examination, the character of the questions, etc. It is not the purpose of this report to either criticise or praise any state board. Each one has many commendable points and all have something to condemn.

Whatever may be the criticism or suggestions here presented, let it be understood at the very outset that no exemption is claimed by the boards represented by members of this Committee. Speaking personally for the State of Illinois, I found as a result of my visits to other boards that there were several things in our examinations that we could change to advantage.

In general, we found as regards examinations a marked lack of uniformity—a lack of uniformity that must be corrected before satisfactory reciprocity can be established. This condition we expected to find. It would be strange were it not so; hedged in as we are by state boundaries, inheriting as we do the precedents and practices of departed boards, proud and jealous as we are of our state rights, ignoring if not resenting outside suggestions, it would indeed be remarkable if uniformity were the rule. Even in the individual boards we did not always find uniformity in the character of preparing questions. Some may even have hobbies—it may be stereoisomerism in chemistry, the cultivation of leeches in pharmacy, the antidotal treatment of yohimbine in toxicology, or the treatment of "sleeping sickness" in therapeutics. But whatever it may be, the composite questions do not always make a harmonious examination. In some boards, we found an overlapping of subjects—each member apparently ignoring what the others were giving. In other boards the examinations were long and exhausting—the examiner trying, it would seem, to go over the entire subject with a fine-tooth comb, while in still others, the questions were so brief as not to admit of thoroughness.

One general criticism that can be made of nearly all examinations is an absence of proportion among the various subjects and a lack of proper distribution of the questions of each subject over that subject. To illustrate, I have seen examinations where toxicology and posology seemed to be the dominant subjects, and where the questions in chemistry would be concentrated on physiological chemistry. Toxicology, it is admitted, is an important subject, but not more so than pharmacy, and urinary analysis should not crowd out either general or organic chemistry.

Now, these criticisms are not made carpingly. We simply want to show the conditions that exist and to point out that they are incompatible with the object at which we aim. The case must be diagnosed before it can be treated. Before suggestions are permissible, it must be shown that they are necessary.

You might be led to believe from the tone of this paper that the examinations are all wrong. Not at all. We do not need to discuss the things that are right. Our laws, our religion, our entire civilization, in fact, are fabricated to correct what is wrong.

The points upon which your Committee wishes to report may be fittingly discussed under three heads. Criticisms and recommendations will be made under the appropriate head, except such general recommendations as may appear in the summary. These topics are:

- (1) Subjects embraced in the examinations.
- (2) Character and scope of the questions on each subject.
- (3) Weight, significance or emphasis attached to each subject in its relation to the other subjects.

First, we found the following subjects covered:

Chemistry, including General, Qualitative, Quantitative, Organic, Inorganic, Physiological, and various combinations of the foregoing, under the head of Pharmaceutical Chemistry.

Materia Medica, embracing Pharmacognosy, Therapeutics, Botany, Posology and Toxicology. Sometimes the last two subjects were presented in separate papers.

Pharmacy, including both theoretical and practical.

Pharmaceutical and Chemical Problems, given in Illinois as a separate paper, but in the other States scattered throughout the other subjects.

Dispensing, both Theoretical and Practical, including Incompatibilities.

Identification and Oral:

In some States, but in none of those visited, Bacteriology and Physiology are also given.

Your Committee recommends the following as the subjects upon which examinations should be based for reciprocal registration:

(a) Chemistry, including General, Qualitative, Quantitative, Organic and Inorganic, or any combination of the foregoing, known as Pharmaceutical Chemistry, as one paper.

(b) Pharmacy, including theoretical and practical, as one paper.

(c) Materia Medica, embracing Pharmacognosy, Botany, Therapeutics, Toxicology and Posology, as one paper.

(d) Pharmaceutical and Chemical Problems, or Arithmetic, to be given as one paper or distributed throughout the various subjects. We consider this a very important subject. Whether because of a decline in the teaching of arithmetic in our public schools or whether the colleges do not or cannot teach arithmetic, we cannot say, but we know from our experience as examiners that there is a woeful lack of knowledge in this subject on the part of candidates for registration. When you consider the daily use of this subject in the drug store in calculating parts to be used in manufacturing or dispensing, in calculating doses and in the ordinary commercial transactions, you will agree that it is the duty of examining boards to see that their licentiates are properly qualified.

(e) Dispensing, both practical and theoretical. We regard this subject worthy of a separate branch. If there is any particular thing in pharmacy for which a druggist needs training it is dispensing. In fact, it is in some places the last remaining shred of professional pharmacy. If we are to license clerks to serve both employer and public as they should, how very important that we *know* from personal observation of their work that they can actually dispense as they should! Written work is not sufficient. Many a "quiz-compend" graduate can put a "crimp" in any reasonable set of written questions in dispensing, and yet that same candidate, in many instances, cannot dispense quinine capsules with as much quinine inside the capsule as he puts on the outside.

(f) Co-equal with Dispensing, we look upon the Oral Examination as the means of testing a candidate's absolute fitness for registration. Get him in front of you, run over the same range of questions as is given in the written work and see how he handles himself. Here is one place where he can't run in a "pony" on you or translate the shorthand on his cuffs. We maintain that the competent examiners can tell more from an oral quiz than from all the written work. It furnishes the greatest safeguard against the registration of incompetents.

Character and Scope of Questions. This is one of the most difficult subjects to handle, as well as the most important, for upon your questions hinges the success or failure of your examination.

What is the purpose of an examination? Obviously, to test the examinee's knowledge of any given subject or his fitness to do a given thing and an examination must do that very thing absolutely or fail in its mission. An examination should not be to shut out as many men as possible, though there are examiners, we think, who hold that view. The attitude of a board member toward the candidate should be that of a friend who desires his success, but who, as a just friend, insists on his measuring up to a certain standard, and who is happy when the candidate succeeds. The questions should not be obscure or obsolete. They should be fair, honorable questions, touching upon the most important parts of the work. Neither "snap" questions or "catch" questions should be tolerated. Questions should be written so that there will be no doubt as to their meaning and susceptible of only one interpretation. Not easy to write, you say? True, but more of that later.

We have agreed, let us assume, upon the subjects enumerated above. Your Committee, therefore, suggests the following number and distribution of obligatory questions:

(1) PHARMACY. Twenty questions. Much care must be used to properly distribute the questions. Assuming twenty questions, about ten should be allotted to the Galenical Groups, such as Waters, Solutions, Fluidextracts, Tinctures, Pills, Powders, Plasters, Suppositories, etc. Some of these questions should be allotted to the N. F. preparations—preferably to those N. F. preparations that do not find a counterpart in the official groups.

(2) Questions to non-metallic mineral preparations, such as the mineral acids, sulphur, Halogens, etc.

- 2 questions to the metallic salts and compounds.
- 2 to the Oils, both fixed and volatile, fats soaps, etc.
- 1 to the Animal drugs. 1 to Alcohols, aldehydes, etc.
- 1 to Coal Tar and synthetic preparations.
- 1 to the organic acids, sugars, etc.

This is of course purely suggestive, the object being to obtain an equitable distribution of the questions according to the number or importance of the compounds represented by the different groups.

It will be noted that no mention is made of the definitions that ordinarily pertain to pharmacy and pharmaceutical operations. These are omitted because they are ordinarily covered in the assistant's examinations that are given in many of the States.

The subdivision of the questions will permit, of course, a wider range than this outline indicates.

(2) CHEMISTRY. Ten questions which should be distributed about as follows: Four in general Inorganic. Two in Qualitative, two in Quantitative and two in General Organic.

(3) MATERIA MEDICA. Twenty questions, distributed as follows: Toxicology 5, Posology 5, Botany and Pharmacognosy 5 and remainder 5. These questions may be subdivided or compounded, i. e., several topics covered in one question. For instance, in asking about Belladonna, it would be quite logical to ask for the botanical characteristics, use, dose, antidote, part used, etc., in one question, it being necessary to maintain only the right proportion.

(4) PHARMACEUTICAL AND CHEMICAL PROBLEMS. Ten questions, with subdivisions, distributed as follows: Weights and Measures 1, Thermometry 1, Alligation 1, Percentage 1, Specific Gravity or Specific Volume 1, Dosage 1, Chemical Problems 2, Commercial Problems 2. It is easy, of course, to combine two or more of these in any one problem, which will then permit of a greater range and variety of questions. If these problems are not given in a separate paper they can be distributed throughout Chemistry, Pharmacy, Materia Medica and Prescriptions.

(5) PRESCRIPTIONS. Four, which should cover the usual range, such as Emulsions, Pills, Suppositories, Ointments, Solutions, Washes, Mixtures, Official Preparations, etc.

In preparing a set of prescriptions care should be exercised in the selection of ingredients which will test the ability of a candidate to properly compound. For instance, in compounding a prescription calling for capsules to be made from a mixture of sodium bicarbonate and powdered aloes, a skillful candidate will have no trouble in producing a capsule without a particle of the mixture adhering to the outside.

Furthermore, if a pill was to be made from a potent drug such as mercuric chloride, along with, we will say ammonium chloride, neither of which contain any of the properties needed to make a good pill mass, a candidate would show his ability as a good pill-maker by his choice of excipients in order to get the proper size and consistency.

Another illustration would be a prescription calling for an ointment to be made of opium, lead acetate, tannic acid, extract of belladonna and wool fat. A prescription of this kind requires more or less knowledge of the general properties of drugs as well as manipulation to compound satisfactorily. The extract of belladonna should be made into a paste with dilute alcohol, and the paste mixed with some of the wool fat. The tannic acid should be dissolved in a small amount of water and likewise mixed with another portion of the wool fat. The lead acetate should be dissolved in a few drops of water, or reduced to the finest powder, and it and the opium each separately mixed with portions of the wool fat. The four separate ointments should then be combined to form one smooth homogenous ointment containing all the ingredients. The finished product should be a perfectly smooth, greenish-brown ointment, free from lumps or grit.

(6) ORAL. No number of questions can be assigned here, because cases will vary. The examiner should have a good range of questions (they may be conveniently written out on cards), or otherwise he will soon find himself running in a "rut."

Relative to the subdivision of questions, care should be taken lest so many divisions be made that the candidate will be burdened beyond reason. Your committee has seen questions where there were ten subdivisions, making a total of one hundred distinct answers necessary on a paper of ten questions. By carefully wording the questions the same information of the candidate's knowledge could be elicited by having not more than two subdivisions. In general, we think, two subdivisions of any question is ample.

We do not require the marathon runner to cover his twenty-five mile course twice to prove he is a qualified sprinter. Then why give a candidate "writer's cramp" by making him tell us that Couch Grass, Dog Grass, Goose Grass, Knot Grass, Quick Grass and Quitch Grass are all our old friend *Triticum Repens*?

As to the character of the individual questions, that will depend wholly upon the examiner coining them. And right here is the meat in the nut. Upon the character of the individual questions rests, mainly, the quality of your examination. Any scheme or recommendation of your committee is of no avail so far as the *quality* of the question is concerned. Any distribution of questions will avail but little unless the questions are right. To use an old phrase, more expressive than elegant, perhaps, "You cannot make a whistle out of a pig's tail." An examiner can or cannot write proper questions. Much like the ability to write poetry, we believe, proper question writing is more inherited than acquired. No rule will help much.

Relative Weight or Significance of Various Subjects. We have already referred to the lack of proportion among the various subjects found in different examinations. It is unfair, of course, to give a relative minor subject dominant importance in an examination, but such sometimes proves to be the case. It comes about in this way: One examiner on the board may be given a minor subject, but consider it of major importance. The man having the major subject may be indifferent as to the importance of his subject, or may be incapable of preparing a superior set of questions. He may be weak in that subject. The result will be an examination without proportion, strong where it should be weak and weak where it should be strong.

Your committee recommends the following as the order of importance of the subjects of examination: Pharmacy; Materia Medica, embracing Toxicology, Posology and Botany; Chemistry; Dispensing; oral Pharmaceutical and

Chemical Problems. Cognizance is given to the relative importance of subjects in an examination by nearly all civil service bodies, where different subjects are given different weights to total a hundred. In the Federal Civil Service examinations in Pharmacy, for instance, the order runs about as follows: Pharmacy 40 units; Chemistry 20 units. Materia Medica 15 units; making a total of 75 units. The remaining 25 units being composed of Spelling, Arithmetic, Penmanship, Letterwriting and Bookkeeping, each 5 points.

We do not know that it is either practicable or advisable at this time to attempt a numerical proportioning of the various subjects. We are inclined to think not. In a state board examination, it is not always satisfactory to have one examiner giving a paper carrying a much greater numerical weight than another examiner. It might lead to internal complications. Precisely the same results can be obtained by proportioning the hardness or difficulty of the questions. If Pharmacy is the most important, make the questions in this branch the hardest. If Arithmetic is the least important, let the question on this subject be relatively easy. In the State of Illinois (which, by the way, I am not putting forth as a paragon of perfection), we have made it a practice to exchange our tentative questions. Each member goes over the questions of the other members, pointing out possible errors, improvements, and changes. In this way, each member of the board can see where his questions duplicate or encroach upon the questions of another member. When the author of any particular set of questions has his set returned to him, with the criticisms and comments of all the other members of the board, he is then in a position to prepare a much better set. These criticisms are not always favorable, but each member understands the spirit in which they are made and the results have been very satisfactory.

General Character of Questions. There is another point that has not been referred to, which may be pertinently considered at this place. It is the relation between the board of pharmacy questions and the accepted courses in pharmacy covered by the standard schools or colleges of pharmacy. We realize that we are treading on thin ice when we open this subject, but we think it our duty to consider it. A student of board questions and college curricula is not very greatly impressed by any intimate relations between the two. He is still less convinced of an intimate relation if he gets outspoken board members and college professors to express their opinions of each other's work. We are not here to argue either side of this question. Both are partly right and both partly wrong. One thing we are convinced of, however, and we think you will agree with us, is that there is not the intimate relation between the board questions and the college courses there should be. The record of college graduates before the various boards of pharmacy proves this conclusively. We are not blaming either side. We only say that it is bad for both. We consider it a very bad thing for the colleges to have their graduates fail in board of pharmacy examinations. It is likewise a bad thing for boards of pharmacy, representing the public and protecting its welfare, to have what should be the cream of the profession, the college graduates, fail in examinations.

In but few states is graduation from a recognized college or school of pharmacy a prerequisite for registration. A bill to this effect recently failed in the State of Illinois. It will be a long time before all the states have such a law.

Certainly it will not be in our generation. Yet all the states have examining boards that attempt to sort out the fit from the unfit. Whether you believe in compulsory graduation is not the question. You will admit, we believe, that the same man with a college education will make a better public servant than without it. But what inducement is there, we ask, for a young man to take a college course of pharmacy if failure before his state board is as probable as improbable? We hold that this condition is unfair to the young man or woman who aspires to enter our profession. We want to go on record here as being on the side of the clerk of today and the proprietor of tomorrow. Is it fair to a young man to compel him, as is done in some states, to get his degree and then require him to pass an examination for which his course has not fitted him? Is it any inducement to a young man to fit himself with a college course when he knows that he has no more chance of passing a board of pharmacy examination than the "quiz-compend alumnus?" We submit that this is a condition that requires remedying.

Suggestions. Your committee believes that such changes as are necessary to bring about a more uniform standard of examinations can be made without any radical departure on the part of any state board. There may be some instances in which the laws of a state prohibit such changes or render them difficult, but we are firmly of the opinion that once it be shown to any legislature that the status of pharmacy in its state will be raised by such change, prohibitory laws will be repealed or laws permitting reciprocity be enacted. Your committee is thoroughly convinced that once reciprocity becomes established that the standard of the profession will be automatically elevated.

As a means of bringing about uniformity in examinations, we suggest that it might be well for the members of this Advisory Committee, whomever they may be, to be clothed with authority to prepare one hundred examination questions in each of the branches herein recommended. These questions could be printed, with proper keys, and furnished to any board of pharmacy desiring them. From these one hundred questions board members could select the requisite number in each branch. Your committee does not want to interfere with the examinations of any board of pharmacy, and hopes you will not construe this suggestion as meddling in any way, shape or form. Such action would be purely advisory and no board of pharmacy would be obliged to select its examination questions from these printed lists. We venture the statement that there is not a member of any board of pharmacy at this meeting who, when pressed for time, would not welcome an entire set of questions, with key, that he knew were academically sound.

Again, it may not be out of place, or assuming to dictate, to suggest that examining boards desiring to do so might send contemplated questions to the Advisory Committee for criticism in the proper spirit and helpful suggestions.

We are taking the liberty of referring to a few examination questions, selected at random, and which were apparently not properly censored.

In a set of Chemistry questions we find the formula for Magnesium Hydrate given as $Mg(OH)$; Strontium Bromide spelled *Strontum*, and Glucoside spelled *Glucocide*. The same paper asks for the reaction between two molecules of Sulphuric Acid and an Atom of Metallic Calcium. Since when did the

action of acids on the metal calcium become of pharmaceutical importance? At the top of the same paper, the candidate was cautioned that correct spelling would be considered in the rating.

In another set, the examinees were asked in one question to tell from what and *how* the following were obtained: Acetone, Cellulose, Amylum, Glucose, Eucalyptol, Terpin Hydrate (spelled Terpen), Benzoic Acid, Pyrogallie Acid, Cacao Butter and Milk Sugar. I wonder if the examiner realized just how much writing it would entail to tell *how* these were obtained—granting that the candidate knew. Truly, a Marathon answer. In that same paper Iodum was spelled Iodium—a curious combination of the Latin and English spelling; Creosote was spelled Creasote, and Hydrocyanic was spelled Hydrocyanic, while at the top of the page the candidate was instructed to "writ" on one side of the leaf.

These mistakes are not as serious, perhaps, as asking for the "alkaloids" of digitalis, or from what plant the "alkaloid" salacin was obtained, but many a bright student must have had a quiet laugh after the examination over these typographical errors. If we demand accuracy in the answers of our candidates we should at least set the example in our questions. Such mistakes, if excusable, are hardly necessary. If these questions had been revised by other board members or by an Advisory Committee, the errors would have been detected before the papers were printed and the board member who prepared them would have been spared humiliation.

Conclusion.—In concluding our report, perhaps we should apologize for the small amount really accomplished. However, you cannot change in one day or one year what has been established for a quarter or half a century. It would not be advisable to do so even if you could. We feel that a start has been made and made in the right direction. Interfering laws, customs, precedents and prejudices will give way when the truth is pointed out. We are standing on the threshold of an epoch-making period. We are living in an age of rapid progress. Social, business and political evolution, if not revolution, is going on about us. The forces of man are being wielded as never before to help his fellow man. Never in the world's history have the resources of medical science been used as they are today to prevent disease and remove its causes. Yellow fever has been stamped out, smallpox no longer terrorizes, and the great white plague must soon yield its intrenched ground. To further this great liberation of the human race from disease and suffering, new men as well as new means are being created. Shall we stand idly by and let others shoulder the burden? Or shall we take our place on the firing line—where we rightfully belong—with those who are fighting the great battle of the race and aid in the cause by producing better pharmacists by means already pointed out as feasible?

We ask you to join us in giving better examinations which will produce us better men. As an inducement and a reward to pharmacists—be they clerks or proprietors—who attain the new standard, let us wipe out the artificial barriers that prevent the free flow of qualified men from one state to another. Surely the day of provincial prejudice has passed. We meet here as a national body having common aims, ambitions and aspirations. Let us express our confidence in each other by our willingness to recognize those whom the others have licensed.

Assuredly, the man who can serve as a pharmacist the people of Missouri, can equally well serve those of Indiana, Colorado or Illinois.

We, as individuals, are transient, but the cause and the public we represent are permanent. We are here today and replaced tomorrow. But let us, in our allotted time, at least, keep the cause moving. In order that there may be no mistakes and no regrets, let us adopt a uniform standard of examinations. Make it as high as the majority wills. Let it be such that it *can* and *will* be recognized from Arizona to Alabama, from Minnesota to Maine. Leave it not to those who follow us to say, "They halted when they should have marched. They saw their duty and they heeded not."

H. C. CHRISTENSEN, Chairman,
E. L. BRANDIS,
CHARLES GIETNER,

Committee.

THE MICROSCOPIC EXAMINATION OF OINTMENTS.*

FRITZ HEIDELBERG AND CHAS. E. VANDERKLEED.

The value of an ointment depends upon many factors, including such things as amount of active ingredient present, absorbability of the vehicle, etc., but not the least important of these factors is the degree or fineness of subdivision of the active ingredient in the vehicle, generally, though erroneously, called the base. No doubt, the finer this subdivision, the better the ointment will be, the more quickly will it be absorbed, and we have as the ultimate limit of fineness of subdivision those preparations in which the active principle is in actual molecular solution, when on the one hand it is soluble in the vehicle, and those in which the active principle is in colloidal solution or suspension, when on the other hand it is insoluble in the vehicle. Only a small proportion of the ointments, official and unofficial in present day use, however, approach these ideal conditions.

Every maker of an ointment, therefore, should endeavor to subdivide his active ingredients as finely and as evenly as possible throughout the mass, and he should therefore have a means of determining when he has reached the desired limit, or when he can conscientiously consider his ointment fine and even enough to insure satisfactory results. Chemical analysis will of course not suffice, for the active ingredient may be present in ample and correct proportion and yet be present in such a rough suspension, as to be useless or even dangerous, as for example, in the case of an improperly prepared yellow oxide of mercury ointment for eye medication.

The only satisfactory method for determining whether or not the proper degree of subdivision has been secured is by means of the microscope. The U. S. P. requires that mercurial ointment shall be rubbed until the individual globules of mercury are no longer visible under a lens magnifying ten diameters. But if still better and more nearly uniform results are desired, and who shall

*Read before the Pennsylvania Pharmaceutical Association, June, 1913.

say that what we have is good enough, that there shall not be further progress, the microscope must be used. In the course of many years' use of the microscope in the examination of hundreds of samples of ointments, the writers thought it might prove of interest to point out some of the precautions that must be observed even in so apparently simple a task as this. It is quite easy to obtain erroneous results if the conditions under which the samples are taken and under which the observations and comparisons are made, are not watched very carefully. The part of the work to which we wish to call particular attention is the preparation of the slide, which we shall illustrate with micro-photographs of mercury ointments.

The method usually employed, and which naturally suggests itself to the operator, is simply to spread a layer of the ointment on a slide, thinning it out to the necessary degree by rubbing the finger, or another slide, over its surface in

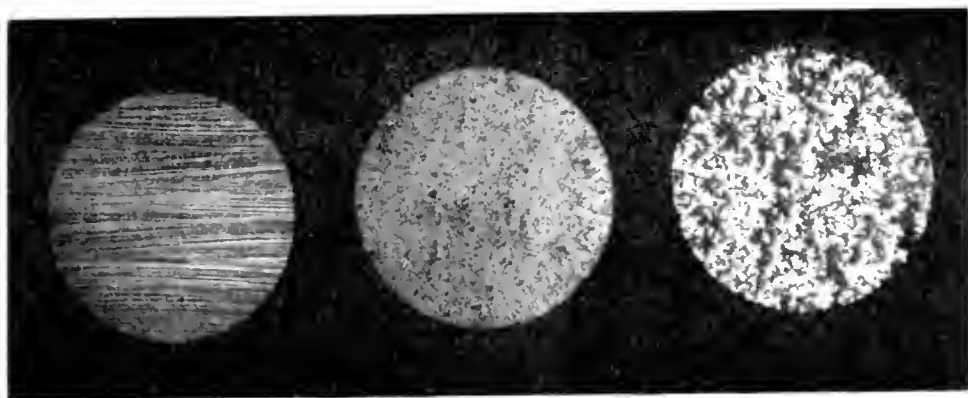


FIGURE NO. 1.

Blue Ointment magnified 100 diameters, showing ordinary method of preparing slide.

FIGURE NO. 2.

Same Ointment magnified 100 diameters, showing improved method of preparing slide.

FIGURE NO. 3.

Same slide as No. 2 showing effect of too much light.

the manner employed in making a blood smear. Unfortunately, the appearance of the globules, in the case of mercury ointments, will depend largely upon the pressure which is exerted in running the finger or slide over the specimen. Sometimes the larger globules are rubbed up finer by this method and oftentimes the large globules are pushed to one side, leaving only the smaller globules to appear in the field of vision, and in either case causing the ointment to appear better than it really is. On the other hand, the pressure sometimes causes a number of the smaller globules to unite to form larger ones, while if not enough pressure be used, a slide insufficiently transparent to permit of good judgment of the ointment results. Moreover, different fields on the same slide prepared in this manner differ considerably in the average size of their particles. Figure No. 1 is typical of the appearance of a slide prepared in the above manner.

In striking contrast is Figure No. 2, which is a micro-photograph of a specimen of the same ointment shown in Figure No. 1, magnified to the same extent (about 100 diameters), but prepared by the following method which we have found, after long experience, to give the most satisfactory and uniform results.

We take a small amount of the ointment—the amount which is held in a small platinum wire loop is sufficient—and place it on the center of a slide. The latter is then gently heated on the water bath until the specimen of ointment is just melted. A cover glass is now gently dropped on the softened ointment on the slide, when, owing to capillary attraction, the ointment will spread itself between the glass and the slide in a very thin film in such a way as to have formed in the center of the disc an area which tends to retain the heaviest globules, while the finer particles will sometimes follow the capillary movement of the melted vehicle toward the circumference. The heavier particles therefore, if they still be contained in the ointment, in this way remain concentrated, and the judgment of the ointment is very easy, since the central area should show particles rather uniform in size, and but few, if any of them, should be very large in comparison with the average.

The question naturally suggests itself as to how we can be sure that the particles in such a slide have not to a certain extent coalesced during the softening

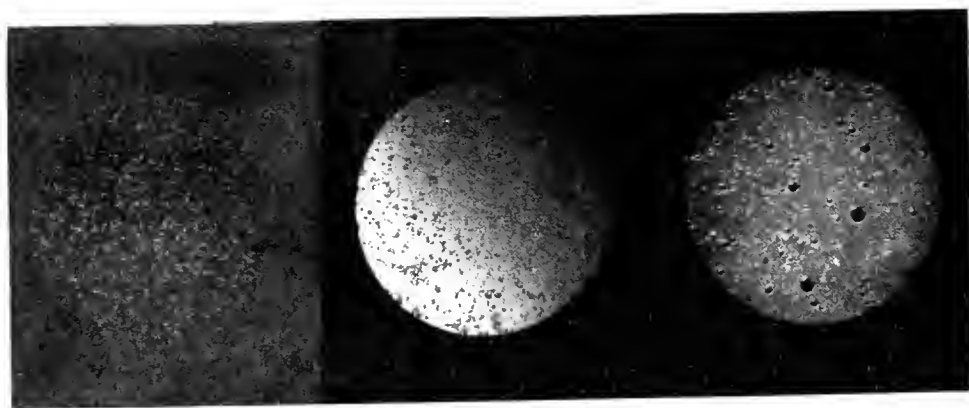


FIGURE NO. 4.

Blue Ointment on market, magnified 100 diameters.

FIGURE NO. 5.

Another Blue Ointment on market, magnified 100 diameters.

FIGURE NO. 6.

Another Commercial Blue Ointment, magnified 100 diameters.

of the ointment. We are sure that coalescence does not occur, because we have observed the melting down of the ointment under the microscope, and have also prepared slides repeatedly from the same ointment with varying conditions as to time and temperature of the melting, and have in this way assured ourselves, that if the above directions are followed, no coalescence of particles occurs and concordant results will be obtained. The same method is used for preparing slides from other kinds of ointments.

The best size of enlargement in our opinion is obtained by a magnification of about 100 diameters, as obtained by using a $\frac{2}{3}$ Baush & Lomb objective, and No. 1 ocular with a tube length of 160 mm. The light should be regulated in such a way that the mercury particles appear as silvery globules on a dark background. This can be easily done by using partly the mirror of the microscope and partly the hand to cut off some of the light. Under these conditions the mercury globules will have the metallic appearance and luster as mercury ordinarily has

in transfused light, and in this form it is much easier to differentiate between the smaller and larger particles, as well as to distinguish a mercury globule from a casual air bubble. If the mirror be used so that the full amount of light enters the field, the contrast between the dark mercury and the light background is so

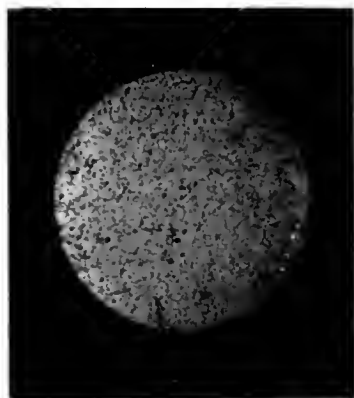


FIGURE No. 7.

Blue Ointment (X100) after 5 hours' grinding.

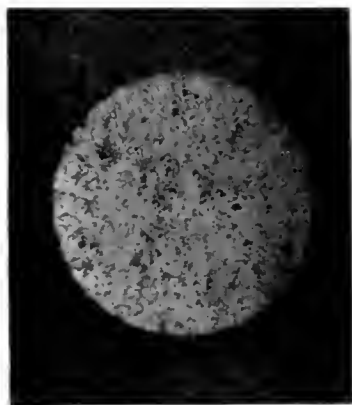


FIGURE No. 8.

Blue Ointment (X100) after 8 hours' grinding.

great that it is difficult to see the individual particles. (See Figure No. 3, which is a photograph of the same field shown in Figure No. 2, but differing in the amount of light admitted in taking the picture.)

As for the standards to be adopted, these are of course arbitrary. It would be difficult to fix a standard for the average size of the particles, as a few very

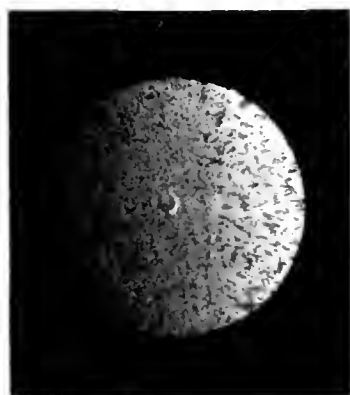


FIGURE No. 9.

Blue Ointment (X100) after 21 hours' grinding.

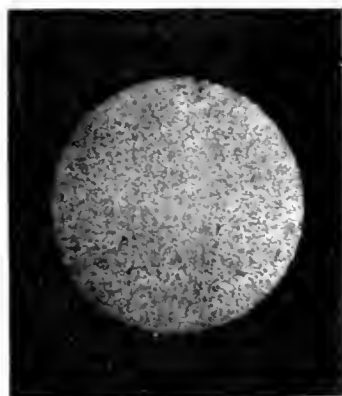


FIGURE No. 10.

Blue Ointment (X100) after 27 hours' grinding.

large particles might contain more material than hundreds of other particles taken together. The best plan to adopt is to take a certain specimen as a satisfactory example and make comparisons of new lots with the sample taken as a standard.

As proof that some attention should be paid to the fineness and uniformity of mercury ointments on the markets, Figures 4, 5 and 6 are shown. These figures represent three samples of Blue Ointment, made by manufacturing pharmacists, as found on the market, magnified about 100 diameters. The question may be raised as to why it should be necessary to reduce the mercury to so fine a state of subdivision. We have observed that if the particles are not very finely subdivided, they will easily coalesce to form larger globules when rubbed into the skin, and thus a part of the material is wasted. We have found, however, that after the particles have become quite finely subdivided, they do not reunite, but are ground still finer on rubbing.

To control the amount of grinding necessary to produce a uniform ointment, the following experiment was made. A lot of Blue Ointment was rubbed up

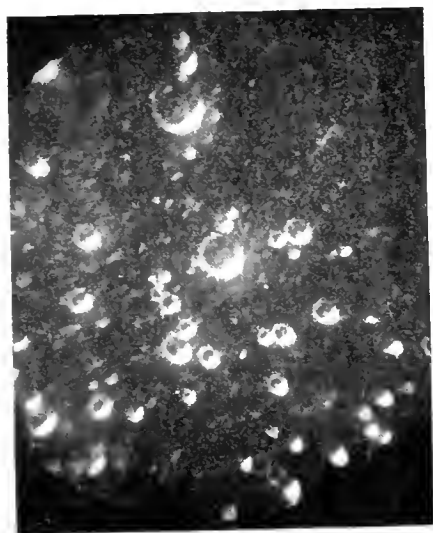


FIGURE No. 11.

Ultra-Micro-photograph (X1000) of same Blue Ointment shown in Figure No. 10.



FIGURE No. 12.

Ultra-Micro-photograph (X1000) of Colloidal Mercury Ointment, 10%.

in a ball mill for 37 hours and samples were taken out for examination at intervals during this time. Figures No. 7, 8, 9 and 10, show the condition of this ointment after 5, 8, 21 and 37 hours, respectively. It will be noticed that by using the above described method of preparing slides, it is very easy to observe the gradual diminution of the size of the globules.

Special attention is called to Figure No. 9, in which a large air bubble, being perfectly transparent, may be very readily distinguished from the mercury globules. Figure No. 10 shows the great uniformity in appearance of the particles under a magnification of 100 diameters after 37 hours' grinding, at which stage it was considered finished.

That the apparent uniformity of the ointment is only relative to the degree of magnification, however, can be seen by still further magnifying the same slide to about 1000 diameters. Figure No. 11 was made from the same slide as was

Figure No. 4, but by the aid of the ultra-microscope, using dark field illumination. That the particles are after all, not actually uniformly subdivided is apparent at a glance.

As suggested in the opening paragraphs of this paper, the only way to obtain the ultimate and highest degree of uniformity combined with the finest subdivision, in the case of a substance like mercury, insoluble in the vehicle, would be to prepare it in colloidal form. This we have succeeded in doing, and we are now engaged in collecting clinical data as to whether these colloidal ointments and oil suspensions possess therapeutic advantages over the ordinary metallic ointments and over the Grey Oil used for intramuscular injection. Figures No. 12, 13, 14 and 15, show ultra-micro-photographs of colloidal mercurial ointment. The individual particles, though theoretically magnified only about 1000 diameters, are actually many times smaller than this, due to the fact that to the observer



FIGURE NO. 13.

Ultra - Micro-photograph (X1000) of Colloidal Mercury Ointment with lowest possible illumination.

FIGURE NO. 14.

Same as No. 13, but with increased illumination.

FIGURE NO. 15.

Same as Nos. 13 and 14, but with more intense illumination.

the particles themselves are luminous and sources of light. Consequently, the brighter the illumination (a high power arc light is required) the larger the particles will appear. This is well shown in Figures No. 13, 14 and 15, which represent the same ointment with gradually increasing intensity of illumination. It is of interest to note how the particles appear to coalesce into kinds of luminous nebulae with increase in luminosity, while if the latter be decreased, the individual character of the particles again becomes discernible. Moreover, no adequate conception of the actual size of the particles can be had because they are in indescribably rapid motion similar in appearance to the so-called Brownian movement of floating dust particles. Thus each bright spot, as shown particularly well in Figure No. 12, represents not the size of one colloidal particle magnified 1000 times, but rather the entire circumference of the glow of a particle rapidly vibrating throughout a space many times its own actual dimensions.

DEODORIZED TINCTURE OF OPIUM.*

JOSEPH W. ENGLAND, PH. M., PHILADELPHIA.

The official Deodorized Tincture of Opium is a solution of the water-soluble proximate principles of opium made from granulated opium and water, concentrated by evaporation on a water bath, washed with purified petroleum benzin and preserved with alcohol. The process eliminates resin, caoutchouc, ligneous matter, odorous principles, etc. The preparation is analogous to the old McMunn's Elixir of Opium.

The objection to the official method of making Deodorized Tincture of Opium is that it is tedious to carry out and the product, unless very carefully made, is apt to have a benzin odor.

Various improvements in the official formula, including the paraffin method, have been suggested, but the simplest and best procedure, in the judgment of the writer, is to make the preparation directly from deodorized opium, as advocated by the late Professor John M. Maisch (King's American Dispensatory, 1900, p. 1978). This has been done in the laboratory of Smith, Kline and French Co., for a number of years and with entire satisfaction.

The following method is recommended:

Deodorized Opium (containing 12 to 12.5 percent of crystallizable morphine).....	100 gms.
Alcohol	200 cc.
Water, a sufficient quantity	
To make.....	1000 cc.

To one thousand cubic centimeters of *cool* water, in an evaporating dish, gradually add the Deodorized Opium, mix and heat on a water bath for six hours, replacing water lost by evaporation. When cool, pour the mixture, as evenly as possible, upon a wetted, non-fluted paper filter in a funnel, returning the first portion of the filtrate until it runs clear. Then percolate the residue on the filter with water until the percolate passes colorless and is only faintly bitter. Concentrate the percolates on a water bath, until they measure seven hundred cubic centimeters, cool, add two hundred cubic centimeters of alcohol, and filter through a paper filter.

Assay the final product by the process given under *Tinctura Opii* of the U. S. Pharmacopœia and adjust the volume of preparation, by the addition of water, so that each one hundred cubic centimeters shall yield not less than 1.2 nor more than 1.25 gms. of crystallized morphine.

By making the final volume nine hundred cubic centimeters, and assaying, the product can be most readily standardized.

In the making of Deodorized Tincture of Opium from deodorized opium, *boiling* water has been used, but, in the writer's opinion, the use of *cool* water, and heating on a water bath, is preferable.

* Presented to New Jersey Pharmaceutical Association, June, 1913.

MAGMA MAGNESIAE.*

GEORGE M. BERINGER, PH. M., P. D., CAMDEN, N. J.

The National Formulary directs that Magnesia Magma, commonly called Milk of Magnesia, be made by pouring a filtered solution of 81 Gm. of Sodium Hydroxide in 4000 Cc. of Water into a filtered solution of 250 Gm. of Magnesium Sulphate in 4000 Cc. of Water. The precipitate is washed by decantation, then drained and mixed with sufficient water to make the product measure 1000 Cc.

This looks like an exceedingly simple formula that should yield a satisfactory preparation. However, in my experience, it has not proven so, and several modifications are necessary and are included in the improved formula now presented.

The author of the N. F. formula aimed to obtain a very fine precipitate by using very dilute solutions and precipitating at room temperature. He succeeded in doing this, but the precipitate is so light and commonly so bulky that it is with difficulty that it can be reduced to a volume of 1000 Cc. and remain sufficiently fluid to pour. The resulting magma usually resembles thick starch paste.

An examination of the wash water shows that the Magnesium is not all precipitated. This is readily understood when the formula is critically examined. The quantity of Sodium Hydroxide directed, 81 Gm., is shown by calculation to be the theoretical amount of pure anhydrous Sodium Hydroxide that would be required to react with 250 Gm. of Magnesium Sulphate, U. S. P., but as Sodium Hydroxide, U. S. P., contains about 90 percent pure NaHO , it is self-evident that the formula directs an insufficient amount.

The chemist has been taught the difficulty of completely precipitating Magnesium Hydroxide in the presence of alkaline chlorides or sulphates and that an excess of the solution of potassa or solution of soda is necessary and that "the separation of this precipitate is greatly promoted by boiling the mixture." The present N. F. formula has insufficient alkali instead of an excess, and, moreover, commits a manipulative error in directing that the Sodium Hydroxide solution be poured into the solution Magnesium Sulphate so that at no time is an excess of alkali present. The use of hot solutions instead of cold should also be directed.

To correct these defects, the following improved formula is presented:

MAGMA MAGNESIAE.

Magnesia Magma.	Milk of Magnesia.
Magnesium Sulphate.....	250 Gm.
Sodium Hydroxide.....	100 Gm.
Water, a sufficient quantity.	

Dissolve the Sodium Hydroxide in 1000 Cc. of Water and the Magnesium Sulphate in another portion of 1000 Cc. of Water and filter the solutions. Heat the solutions to boiling and add the Magnesium Sulphate solution to the solution of Sodium Hydroxide with constant stirring. Boil the mixture for fifteen minutes, then remove from the fire and wash several times by decantation and then on a close muslin strainer until the washings are free from saline taste and

* Read before the New Jersey Pharm. Assn., June 11, 1913.

give not more than a slight turbidity with Barium Chloride T. S. Allow the magma to drain, then transfer to a suitable vessel and add sufficient water to make 1000 Cc. and mix thoroughly.

In order to obtain a nice white and smooth preparation, one must be careful of the character of the water used. If distilled water is produced in abundance and at a minimum cost, it can be used to advantage. The cost of distilled water to the average pharmacist, however, would preclude its use for the washing of this preparation. Satisfactory water can be cheaply and readily obtained by adding 5 Gm. of powdered Magnesium Carbonate to each litre, boiling and then filtering.

ELIXIR FERRI, QUININAE ET STRYCHNINAE PHOSPHATUM.*

GEORGE M. BERINGER, PH. M., P. D., CAMDEN, N. J.

The formula for the Elixir of the Phosphates of Iron, Quinine and Strychnine, U. S. P. VIII, has been criticised largely because of the uncertainty of the color in different lots and the rapid changes that take place in the color and flavoring on keeping. Recently, another question has been raised, namely, if Quinine in solution with Acetic Acid is not partly changed to Quinotoxin. Consequently, it seems desirable to adopt in the revision a different formula.

The pharmaceutical journals have presented a number of proposed formulas and it has fallen to my lot to try many of these. Without going into a detailed account of the experiments or criticism of these formulas, I will submit the improved formula which I have recommended:

ELIXIR FERRI, QUININAE ET STRYCHNINAE PHOSPHATUM.

Elixir of the Phosphates of Iron, Quinine and Strychnine.

Soluble Ferric Phosphate.....	17.5	Gm.
Potassium Citrate.....	5	Gm.
Quinine	8.75	Gm.
Strychnine	0.275	Gm.
Phosphoric Acid.....	2	Cc.
Alcohol	200	Cc.
Glycerin	200	Cc.
Compound Spirit of Orange.....	10	Cc.
Purified Talc.....	30	Gm.
Distilled Water, a sufficient quantity		
To make.....	1000	Cc.

Dissolve the Quinine and the Strychnine in the Alcohol and 100 Cc. of Distilled Water to which has been added the Phosphoric Acid. Add to this the Compound Spirit of Orange. Dissolve the Soluble Ferric Phosphate and the Potassium Citrate in 100 Cc. of warm Distilled Water. To this solution add the Glycerin and then the alkaloidal solution and sufficient Distilled Water to make the product measure 1000 Cc. Mix the Purified Talc intimately with the liquid and then filter, returning the first portion of the filtrate until a transparent

* Read before the New Jersey Pharm. Assn., June 11, 1913.

liquid is obtained. Lastly, wash the filter with a mixture of 1 volume of Alcohol and 4 volumes of Water until the filtered product measures 1000 Cc.

In this formula the proportion of the medicinal ingredients is retained the same as in the present official formula, as it was not deemed desirable to make any change in the accepted strength or dosage. The use of glycerin as the sweetening ingredient in place of sugar has proven very satisfactory in elixirs containing iron salts and corrects the tendency of such elixirs to change color. The green tint of the product as at first prepared appears to undergo no marked change after keeping for a year or more. Instead of using Aromatic Elixir as a diluent, the elixir is made in the process of the manipulation, the Compound Spirit of Orange being added, thus insuring the greatest amount of flavoring possible. The manipulation is an important factor in obtaining a satisfactory product and a reversal of the directions as to mixing will promptly demonstrate this.

A RAPID METHOD FOR THE QUANTITATIVE ANALYSIS OF ZINC OINTMENT.*

JOSEPH L. MAYER, PH. G., PHARM. D., NEW YORK CITY.

In testing some samples of Zinc Oxide Ointment recently, it appeared to me that the analytical methods now in use were too involved and time consuming for the pharmacist: I therefore devised the following very simple and accurate process:

Into a tared porcelain crucible, accurately weigh 1 gram of the sample, heat cautiously until the material bursts into flame, allow to burn quietly until all inflammable material is consumed, then heat strongly with the Bunsen burner until all organic matter is burned off, cool and weigh.

Should difficulty be experienced in burning off organic matter, moisten with a drop of nitric acid, heat cautiously to avoid spattering, and then with the full flame as before.

Since 1 gram of the sample is taken the residue, which is oxide of zinc, can easily be computed into percentage by multiplying the result by 100.

Of course, if necessary this result can be checked by determining the zinc in the residue volumetrically, gravimetrically or electrolytically, and calculating to oxide.

There does not appear to be any reason why the method cannot be employed with equally good results for the analysis of zinc stearate ointment. In this case the amount of stearate present could easily be calculated from the residue of zinc oxide.

The method, in addition to being rapid, is accurate and easily applied.

* Read before the New York State Pharmaceutical Association, June, 1913.

CHEMISTRY AND PRACTICAL JOKES.*

CHARLES H. LAWALL, PH. M., PHILADELPHIA.

Practical joking is jesting carried into action and is usually looked upon as a low and reprehensible form of humor. Sometimes, indeed quite frequently, and especially about the Fourth of July, when explosives are available, serious results are reported from such attempts to be funny, as placing a lighted cannon cracker under the chair of an unsuspecting person or shooting a blank cartridge toward a person.

Such forms of practical jokes as require no particular apparatus or material but occur spontaneously, are bad enough, but within the past few years there have been attempts, particularly by German manufacturers, to stimulate and develop the practical joking industry by supplying materials for carrying out such annoying practices as the production of a disagreeable odor or the setting of a large room full of people to sneezing.

The manufactured devices for producing a foul odor are in the form of capsules or containers of thin glass, easily crushed under the foot and containing a solution of hydrogen sulphide, which in these sealed glass containers, seems to keep indefinitely. Several sizes of these "stink bohnen" or "foul bombs," as they are labeled, are sold in small chip boxes filled with sawdust to prevent breakage of the bombs.

Practical joking must certainly be an international custom, for one package which I purchased for the purpose of investigation of the subject had a label printed in three different languages, French, German and English. These foul bombs, when broken, produce the characteristic rotten egg odor of hydrogen sulphide, which, however, soon disappears and doubtless no great amount of harm can result apart from the annoyance.

It is a different matter, however, in the case of the sneeze powders, as they are called, which are sold in tiny vials, labeled "Kachew Powder," each containing about 10 grains of a gray powder which I found to be one of the most acrid and irritating substances known to chemistry. Contrary to the usual supposition, red pepper, hellebore, bayberry, sanguinaria, tobacco or other common sternutatories, are not present in this material, which I have recently investigated and found to consist almost entirely of acridine, probably a crude form of the substance.

Acridine, $C_{13}H_9N$, is a basic substance obtained as a fraction of coal tar, associated with crude anthracene. Its name is indicative of its properties. It is a powerful sternutatory and skin irritant. The only legitimate use to which it has ever been put is as an insecticide and also in compositions for coating the bottoms of vessels to preserve them. It is said by some authorities that the preservative properties of some coal tar products are due to the presence of small amounts of acridine.

The use of such a powerful substance as this by malicious or unthinking persons should be suppressed. Indeed, I believe its sale could be restricted if not entirely prevented by a proper enforcement of the poison laws, as it is certainly a poison within the legal meaning of that term.

*Presented to Pennsylvania Pharmaceutical Association, June, 1913.

THE APPLICATION OF TINCTURE OF IODINE IN SURGERY AND ITS EXPLOITATION BY PHARMACISTS.*

FREDERIC E. NIECE, PHAR. D., NEW YORK CITY.

Of all the tinctures given a place in the armamentarium of the present-day surgeon, that of iodine holds perhaps the highest position in the esteem of the successful operator. During the past few years, several experimenters have used iodine in some fluid form or other with a view of ascertaining if possible, its disinfecting and antiseptic properties. The success that has crowned their efforts along these lines has established the fact that tincture of iodine is a valuable and indispensable adjunct to the surgical ward. These gratifying results have been the means of creating a sphere of prominence for iodine heretofore unequaled by any other tincture of a similar nature. The extensive datum now at our command, as it pertains to actual results in the field of operative surgery, places iodine as the one tincture par excellence. The variety of uses to which it has been applied with beneficial results, as reports seem to show, has gained for it a standing that perhaps very few of the other elements will ever reach. As a galenical long known to us all, but whose virtues seem to have been so little regarded, it has in a wide measure, made for itself, a new province of usefulness and efficiency in medicine, and as we shall endeavor to elucidate, an equally as good means for deriving a profit to the pharmacist.

In a vague manner, we have known iodine to be possessed of peculiar properties, for some time past, but as to what they were, absolute facts to base our opinions upon, up to a few years ago were lacking. Iodine dissolved in alcohol and called "Tincture of Iodine" has not only been of service to our various Boards of Pharmacy, but it has also been accepted by the laity as a useful servant in eradicating many of the light ailments flesh is heir to. In short it has been largely regarded as a household panacea. Much of this, naturally, was fanciful, but notwithstanding this notion as to its virtues, it did work wonders, but why, no one seemed to know until experimenters began to give some attention to the subject of its hidden properties. Within the last year or so, much has been written extolling in the strongest terms its alleged virtues. One excellent feature about this substance is, in the granted assurance that it will work, in many critical surgical cases, where heretofore, serious results have been the outcome from using other substances in a like manner. This has been largely due to the fact that it fulfills a function that so many other disinfectants cannot begin to do.

By reason of this, it has been the means of developing a new line of procedure in operative technic owing to its manifested virtues, which permits of certain proscribed methods. Facts seem to bear out the statement that as to recent wounds, no matter how unclean they may be, tincture of iodine can be relied upon to prevent secondary conditions. There appears to be a general feeling

*Presented to the thirty-fifth annual meeting of the New York Pharmaceutical Association, June, 1913.

of confidence with medical and surgical exponents, whenever it is applied in cases of this kind.

By the medical fraternity it has come to be considered a *multum in parve*. It appears that the first confirmed reports as to its ascribed virtues, and its demonstration into American surgery, was by Major Frank T. Woodbury of the U. S. A. Medical Corps in 1906, when he used it for its value as an antiseptic and disinfectant in a case of Caesarean section on a patient from the Island of Samar. In this connection Bauman, of New York, also claims to have used it in the emergency wards of the St. Marks Hospital, and Mt. Sinai Hospital Dispensary in the years 1905 and 1907, respectively. The earliest reports in which it was applied in severe cases of flesh wounds was by Prof. Powell at the Rush Medical College in Chicago, during the years 1869 and 1870. He used it in woorarra poisoning. In the year of 1907, Dr. Knowles, of Iowa, applied it in rattle snake bites with excellent results. What controversy there may be on the subject, it is quite true that Major Woodbury is entitled to some credit on the work he has done in this direction. At least his published reports in the N. Y. Medical Journal of May, 1907, and the same journal in December, 1910, holds that he was a pioneer in its use for general surgical purposes. It seems rather strange that it required almost a century for us to determine the peculiar properties iodine held in reserve, for from the time old Courtins in 1811, a renderer of fats and a boiler of soaps, living in Paris at that time, observed the peculiar action of Kelp liquors on his copper boilers, to the discovery by Woodbury, it has required just ninety-five years to produce the evidence. A rather long time beating about for some one to find out its virtues.

In the 1910 report of Major Woodbury, six interesting cases are cited in detail, in which solution of iodine was the only antiseptic and disinfectant used. The case reports are very profusely explained. In this, his conclusions on iodine are so exceptionally good, that the same is well worth the repetition, for the reason, that it conveys a general idea as to the disclosures made by the use of iodine in actual practice.

"* * * Iodine is the long desired ideal disinfectant and antiseptic. It is cheap, easily obtainable, can be carried in small bulk, is efficient in high dilution, does not damage tissue even where its vitality has been much reduced by traumatism or infection, it has been invariably successful as a germicide under all conditions when the drug and the germs have been brought together, and though it has great power of tissue penetration the writer has yet to see a case of poisoning even when it is mopped in full strength on the peritoneum and in the parturient uterus."

"It can be used to disinfect the area of operation without previous preparation, to sterilize instruments, suture material, dressings, and the hands of the surgeon, during the time that the patient is going under the anesthetic. * * *"

In another part of his paper he writes interestingly as follows:

"* * * Tincture of iodine is the most valuable drug that railroad and military surgeons can have * * * a good surgeon and tincture of iodine will show as good results as the finest marble lined operating pavilion served by the

most scrupulous followers of Lister. * * * This paper is full of practical thoughts as regards the application of tincture of iodine in medicine and surgery.

Other references of a more recent nature are as follows:

Merck, in his Annual Report for the year 1911, states: "Although it is questioned by some, whether tincture iodine has a strong bactericidal action, yet painting with iodine is recognized to be one of the best, if not the best method for disinfecting the skin."

Others are as follows:

Casassorici calls tincture iodine an excellent antiseptic in minor surgery. He painted extremely dirty wounds with it, sutured them, again painted them, and the wounds rapidly healed.

Prof. Reclus prefers it over all other known surgical disinfectants, for wounds on workmen's hands, grimed with filth and dirt.

Hofmann used it in about 100 abdominal cases without one intestinal obstruction.

Mantelli applied it in over 700 operations with excellent results.

Sick, in 150 appendicitis cases had no obstruction by adhesions from its use. Gilbert recommends it in corneal ulcers with satisfaction.

Schmid suggests its use as he has applied it in all midwifery operations.

Franke extols its virtues in surgical tuberculosis, before and after operation.

Babes, Ferrari and Mario used it largely in erysipelas, while Hildebrand injected it in cases of obstinate infectious urethritis.

Holden experienced wonderful results in luetic conditions, externally and internally. Schantz highly recommends it in all wounds to insure scar production with the least possible danger of disfigurement. Senn, Jewett, Grossioli and others have used iodine as a disinfectant of the skin in the area of operation to the exclusion of all others. With Bernucci, he used it entirely for disinfecting the hands prior to operation. In lumbar anaesthesia, Tomaschewski claims that the technic must be done under most extreme asepsis, and to this end he paints the skin with tincture iodine. And thus may the reports be enumerated ad libitum. In most all of the cases thus far reported, tincture iodine was used in from two to ten percent, and in some cases the concentrated tincture made by evaporating one of the above.

Now in the face of all this, of what interest is it to the pharmacist? In this connection the story is a short one. In the first place, to put this matter before the medical contingent of your immediate section, it must be done in such a manner as to enlist interest and attention.

In the second place, you must make certain claims for your product over the ordinary tincture and be prepared to substantiate them.

Thirdly, you should exercise your ability, and get out a nice neat package, something unusual but useful, in conjunction with an entertaining line of talk in booklet form as to its uses and application in medical and surgical procedures. Much of this information will be found in books, various medical journals and those papers of Major Woodbury.

Next, how can I make my product better than the ordinary tincture which is sold all over the country?

Briefly, any one can make tincture iodine, but not every one knows what that tincture may contain. In this alone you have a means of creating a market. For instance, assay your finished product, assign a date on your package as to the above, note its absolute strength, guarantee its purity, and assure the absence of impurities, by a truthful declaration on the label. As to impurities, we know iodine contains more or less non-volatile matter, poisonous cyanogens, irritating chlorin compounds, and caustic bromin products. By testing for these, eventually removing them if they be present, and giving simple tests whereby the average physician can determine for himself as to whether or not you are telling the truth, would undoubtedly establish your prestige and become a new source of revenue. Two men got rich on making cold cream and selling it to the drug trade. It was not so much that they knew of a better process, as much as it was in the materials which they used in producing it, along with care in its preparation.

As to the introduction of it to the medical profession, every pharmacist will have to adopt such measures as will best suit the needs of the section in which he thrives. Two things, however, are important.

One is, the literature which you send out must be gotten up to attract attention and be of interest, so that it will not go the way many poorly constructed documents have gone. Reliable data, with credit to the investigators, along with other suggestions as to its wide range of application both in medicine and surgery as you know of, should also be given in a neatly arranged brochure. Good literature pays, especially when it is sent to people of a discriminating turn of mind.

Following this is the second thought, and this relates to the container and package. This will also depend entirely upon the tastes of the individual, insofar as it pertains to the package, but as to the container, this will be a more difficult problem. Up to the present we have no suitable iodine receptacle. This is truly manifested in the average physician's grip. If one will but take notice, he will observe that the tincture iodine bottle in the above is the most unsightly one of the whole group. What is needed is a handy, serviceable container.

From the foregoing, I think enough has been stated to prove the efficiency of tincture iodine, especially in surgical practice. Now what remains is, to what extent is the pharmaceutical profession going to put this valued drug before the medical fraternity, and derive a fair profit in so doing?

I can only state in conclusion, that such as it is, it is worthy of a most earnest and sincere trial, for if surgery has reasons to acclaim it one of the most essential things to the operating room, it should of necessity, behoove the pharmacist in consequence thereof, to supply it.

REPORT OF P. P. A. COMMITTEE ON PATENTS AND
TRADEMARKS.*

F. E. STEWART, M. D., CHAIRMAN, PHILADELPHIA.

Pharmacists throughout the country are interested in the U. S. P. and N. F. propaganda. They want physicians to prescribe U. S. P., and N. F. products in place of proprietary medicines. This motive is primarily a selfish one, and secondarily altruistic. They want a return to good old times when doctors wrote extemporaneous prescriptions to be compounded by the druggist at fair profit. This is a selfish reason, but, as pharmacists, licensed by the state to practice pharmacy, they have a right to protest when business men without either education or license invade the pharmaceutical field and take their business away from them. They believe that the public would be better off under a system of extemporaneous prescriptions written by competent physicians and compounded by competent pharmacists than under a system of ready-made prescriptions compounded at wholesale by manufacturing houses. This is altruistic.

Now, if pharmacists were consistent in this matter, the U. S. P. and N. F. propaganda would be more successful. But to a large extent each pharmacist deals in ready-made preparations of his own, which he offers to the public for self-medication and thus not only prescribes without diagnosis, but competes unfairly with the doctor in treating the sick. Consistency is therefore the first thing necessary in cleaning up the propaganda and fitting it for successful use.

Opposed to the U. S. P. and N. F. propaganda are the manufacturers of "proprietary" medicines of all kinds, including so-called patent medicines advertised to the general public for self-medication, secret or semi-secret specialties advertised to the medical profession, and manufacturers of unofficial chemicals advertised in the medical journals.

There is another class of products the manufacturers of which favor the propaganda, provided some plan can be adopted whereby the introduction of new and useful chemie and pharmaceutic inventions can be inhibited from competition so that capital invested in the working and marketing of the same may be protected for limited times.

The patent law was devised for that very purpose. As pointed out in former reports, a patent is a contract between the inventor and the public, whereby the inventor receives a seventeen-year monopoly grant in exchange for the publication of his invention.

Progress is seriously hindered unless new products can be impartially discussed in medical societies and colleges and in the medical journals. Such discussion is impractical if the products are commercially controlled and monopolized by industrial manufacturers.

Most foreign countries will not grant patents for materia medica products, but limit the grants to new processes and machinery for manufacture. Germany has been one of the foreign countries taking that position, but an attempt is now

*Presented to Pennsylvania Pharmaceutical Association, June, 1913.

being made to change the German patent law so that it may be in harmony with the United States patent law and thus enable the German manufacturing houses to secure the same protection in their own country which they have been enjoying in America.

The medical profession is opposed to the monopoly of materia medica products. A physician who obtains a patent for a materia medica product or a surgical instrument or a method of treating disease, is at once ostracized by the profession. Yet at the same time, physicians prescribe monopolized products and medical journals derive a large part of their income from the advertisements of their manufacturers. When the profession is criticised for its inconsistency, the excuse advanced is that pharmacy and manufacturing chemistry are branches of commerce and not professional in character. Consequently, while it is not ethical for a professional man engaged in the practice of medicine to patent his inventions because he must occupy a judicial position toward them which he cannot do, if he is interested in their sale, it is not expected that the pharmacists and manufacturers will occupy a judicial position toward materia medica products and their patenting by pharmacists and manufacturers is therefore allowable. This denies to the pharmacist the right to consider himself a professional man. According to the medical profession, pharmacy is not a profession, neither indeed can it be so long as the pharmacist is obtaining an income from the sale of drugs. Is the pharmacist willing to give up the professional ideal and be classed merely as a merchant or tradesman? He cannot be a professional man, except as a producer of materia medica products. If he produces those products in conformity with professional and scientific requirements, he has just as much right to claim to be a professional man as the physician who accepts fees for his services and is therefore to that extent engaged in a commercial vocation.

The question therefore is, can the pharmaceutical profession endorse the scheme for monopolizing materia medica products by commercial houses, controlled by business men and conducted in opposition to professional and commercial requirements? The educational interests of pharmacy will answer in the negative. What has the pharmaceutical profession itself to say about it?

Your chairman has just returned from the annual meeting of the American Medical Association held in Minneapolis. He takes pleasure in reporting that the members of the Council on Pharmacy and Chemistry present were in harmony with those who object to product patents as applied to materia medica products. They favor process patents but believe with us that the products themselves should be open to competition, so that they may be impartially discussed in the medical journals, societies and colleges. It can hardly be expected that the medical press will accept contributions from persons engaged in materia medica commerce, especially when they relate to commercially controlled products. Such communications are classed by the journals as advertisements to be published in the advertising columns and paid for by the manufacturers. This is unfortunate as it deprives the medical profession of information from scientific men employed by the manufacturers, except in a roundabout way. It would be far better if such communications were received and submitted to impartial criticism by scientists engaged by competing houses, so that physicians

might be placed in a judicial position in regard to them. Furthermore, it would encourage the manufacturers to employ graduates from our medical and pharmaceutical colleges in their scientific departments and thus open the door for educated men posted in the various branches of materia medica science.

At least one house is thoroughly in harmony with the educational institutions engaged in teaching the pharmacologic arts. We refer to the H. K. Mulford Company, because we believe that the advanced position taken by that house should receive recognition. In a recent letter written in reply to one of the leading Minneapolis physicians, who wished data in regard to the adrenalin case to bring before the Association, the following paragraphs occur:

"We opposed the product patent for years because of its monopolistic tendencies. This case (adrenalin case) is a concrete example of what it is possible to do with the product patent in preventing products of similar nature being prepared, as also preventing all advance in science. We believe that the medical and pharmaceutical professions should demand a repeal of our patent law of the product patent clause when pertaining to medicinal substances.

"We have repeatedly brought this subject to the attention of medical and pharmaceutical bodies, and hope the time will come when the clause relating to the patenting of materia medica products in our patent laws will be repealed, or so modified as to prevent monopoly on the ground that it hinders progress in medical science and in the arts of pharmacy and drug therapeutics.

"We have consistently refrained from availing ourselves of patent protection for the new products discovered by our Research Department until very recently. Within the last month we have been granted a patent for a new synthetic chemical, which we found necessary to secure to not only protect our commercial interests, but to protect the medical and pharmaceutical professions from unfair monopoly. This product patent we are ready at any time to abrogate, provided we can obtain proper support from the medical and pharmaceutical professions in our protest against the abuse of the patent and trade-mark laws. We are ready at any time to cooperate with the professions as represented by their national organizations in an appeal to Congress for a modification of these laws having as its object the rectification of the several abuses to which we have called your attention."

The medical profession has for a long time recognized that capital invested in the publication of medical literature should be protected by copyright, and it is considered perfectly ethical for physicians to associate themselves with medical publishers as editors of medical journals or authors of medical books for the purpose of securing financial gain. Why then should not the medical profession endorse the patenting of materia medica products and the association of physicians, chemists, physiologists and other scientific men with commercial houses, for the proper introduction of new materia medica products. Let us briefly consider some of the reasons why they should endorse such a plan and also reasons for not doing so.

The Constitution of the United States gives Congress the power "to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." It is reasonable to suppose that the proper application of the patent law to materia medica inventions would promote progress in the science of medicine and in the useful arts of preparing materia medica products and applying them to the treatment of the sick.

A patent is a contract between the inventor and the government, representing the public at large. The consideration moving from the inventor is the production of a new and useful thing, and the giving to the public of a full knowledge thereof by means of a proper application for a patent, whereby the public is enabled to practice the invention when the patent expires.

The consideration moving from the government is the grant of an exclusive right of manufacture for a limited time (seventeen years) and this grant the government protects and enforces through its courts.

"The statute enacts that before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor in writing to the Commissioner, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding and using it in such full, clear, concise and exact terms as enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same."

What better plan for the advancement of science could possibly be conceived of than the plan of a patent law? The theory upon which the patent and copyright laws rest is, that it is to the advantage of the whole community that authors and inventors should be rewarded, and that no measure of reward can be conceived more just or equitable, and bearing a closer relation to the benefit conferred by the particular individual, than to grant him the sole right to his writing or discovery for a limited period of time.

Why then should the medical profession object to *materia medica* patent? There are two great reasons for this opposition. The first is the scheme for perpetuating the monopoly obtained by patents, by registering as a trademark the name of the patented article and thus controlling its sale indefinitely. To be sure, the Supreme Court of the United States in its decision in the *Singer Sewing Machine* case, declared this scheme to be contrary to law, but in spite of this fact, every case must be fought out on its merits, thus subjecting those who wish to take advantage of this decision, to expensive lawsuits. The trademark laws should be so modified as to avoid this difficulty.

The second objection is that the patent law is not being applied to *materia medica* products in such manner as to secure its benefits to the public. The law requires that an invention to be patented must be *new and useful*. Patents are often granted for *materia medica* products which do not in fact comply with these requirements. A *materia medica* product may be new from a chemical point of view and yet not be useful from a therapeutic point of view. Therapeutic verdicts can only be obtained by the cooperative investigation of many competent observers extended over years of time and conducted under such differences of environment and conditions as will eliminate errors due to the personal equation. How, then, can it be determined beforehand that a new *materia medica* product is therapeutically useful? How can it be determined by a few clinical reports obtained from physicians who have not been trained to be competent observers? How can it be determined at all until the product has been submitted to comprehensive pharmacologic and clinical research? It was evident that these questions must be satisfactorily answered before the medical profession can consistently endorse the patenting of *materia medica* products.

The patent law requires a written description of the invention, and of the manner and process of making, constructing, compounding and using it. How can the inventor of a new chemical product comply with the requirements in regard to the using of a new product as a therapeutic agent? The medical profession objects to the teaching of therapeutics by commercial houses. In this

objection, the profession is abundantly supported by the deplorable conditions existing in the materia medica supply business. We refer particularly to the methods employed by the manufacturers of new materia medica products in their advertising. The publication of accurate information obtained from competent observers after it has been submitted to the censorship of unbiased authorities is to be commended. But the publication of unsupported testimony and hearsay evidence and its circulation to the medical profession by commercial houses is a serious menace to medical science and also to the practice of pharmacy and therapeutics.

This objection may be obviated by the legislation already passed and in process of advocacy before state legislatures on the subject of advertising. The Sherley Bill has already become a national law for the control of interstate commerce so far as advertising is concerned. Bills are being presented to all of the states in the Union having as their object the regulation of advertising. These bills are supported by the advertising fraternity itself. What is known as the "Printer's Ink Bill" is being used as a type for this legislation. Now, if it is found practicable to enforce laws making it a misdemeanor to publish misleading advertising, one of the most serious objections to the patenting of materia medica products will be removed.

It is probable that if these objections can be obviated and the patenting of materia medica products placed on a basis permitting the teaching of accurate information concerning them, the same to be under the control of the medical profession, the profession will endorse the patent system as applied to the newer materia medica.

One of the most important occurrences relating to the application of the patent law transpiring during the present year was the decision of the Supreme Court of the United States in the case of the Bauer Chemical Co. against James O'Donnell. The Bauer Chemical Co., as is well known, are the American owners of Sanatogen, and James O'Donnell is a cut-rate druggist of Washington City. Sanatogen is covered by letters patent issued by the United States Government, and, acting under their supposed rights under our patent laws, the Bauer Chemical Co. fixed the price at which Sanatogen should be sold, and placed on the packages thereof a notice to the retailer that the article was patented, and warning him that "any sale at a less price than that so fixed will constitute an infringement of our patent No. 601,995, under which Sanatogen is manufactured; and all persons so selling or using packages or contents will be liable to injunction and damages." The further notice was given "that a purchase is an acceptance of this condition, all rights reverting to the undersigned in the event of violation." O'Donnell, having purchased Sanatogen from certain wholesale druggists, disregarded this notice and sold at retail original packages of the same, which bore the aforesaid notice, at less than the price fixed and appearing thereon. Persisting in this practice, the Bauer Chemical Co. brought suit against him for infringement. The Supreme Court, reversing the decisions of several inferior United States Courts, held that there was no infringement of the patent rights of the Bauer Chemical Co.; and for the first time this important question has been definitely determined by the court of last resort.

The inventor has a perfect right to fix the price of his product, but after he has sold it, his control ceases and the purchaser can resell at any price he may desire. The same applies to the so-called trademark preparation. This was also decided by the Supreme Court in the case of Miles Medical Co. vs. Park & Sons. The decision was rendered in 1910. Justice Hughes said:

"The complainant relies upon the ownership of its secret process and its rights are to be determined accordingly. Anyone may use it who fairly, by analysis and experiment, discovers it. But the complainant is entitled to be protected against invasion of its rights in the process by fraud or by breach of trust or contract."

In other words, the fact that the plaintiff happened to have a monopoly in the manufacture of its preparations did not give it a right to such monopoly, as would be the case with goods protected by patent. The learned justice said that while the manufacturer of a patented article was entitled to certain privileges in return for the invention he had made, which would become public property at the expiration of his grant, the manufacturer of goods under a secret process was entitled to no such consideration. He also said "agreements are combinations between dealers, having for their sole purpose the destruction of competition and the fixing of prices, are injurious to the public interest and void." In the recent decision of the Supreme Court, this principle has been applied to patented articles, so that now it is illegal for manufacturers to attempt to dictate prices, either for patented or unpatented materia medica products.

There is nothing in this decision nor in that of the Dr. Miles Medical Company, which preceded and foreshadowed it, to prevent a manufacturer from selling his wares through agents exclusively, upon whom he still has the right to impose any conditions that he desires, and these conditions the agents must observe upon pain of revocation of their agency. But the agency must be a bona fide one and not mere subterfuge to get around the law.

In conclusion, your committee begs to call attention to the fact that if the same amount of attention were paid by the pharmaceutical profession to the proper application of the patent and trademark laws, to the materia medica supply business, as has been given to maintaining prices for nostrums, we would not at the present time be called upon to solve the perplexing problems now imposed upon us by the existence of conditions which would never have occurred if we had been true to the principles taught us by our colleges of pharmacy. Pharmacy is a branch of medical science and practice and the pharmacists should cooperate with the doctor in the practice of the pharmacologic arts. There can be no two medical professions, one parading under the name of pharmacy. It is the function of the doctor to treat the sick, that of the pharmacist to prepare the medicine. Whether or not medicine is prepared wholesale by great manufacturing houses is of secondary importance to the greater question in regard to who is to control medical and pharmacal practice. These arts should be under the joint control of the medical and pharmaceutical professions. Their practice should be confined exclusively to educated and licensed physicians and pharmacists, each working in their respective fields, and the patent and trademark laws should be so applied as to harmonize with the medical and pharmacal laws and not used for protecting a commercial business carried on in unfair compe-

tion with licensed practitioners by business men ignorant alike of medicine and pharmacy, and not willing to comply with professional, scientific requirements.

Following the reading of the above report, J. W. England presented the following, which was unanimously adopted:

"WHEREAS, The U. S. Patent Laws permit inventors to patent, not only *processes* of manufacture, but also the *products* of processes *as such*, so that it is impossible for any other inventors, inventing new and original processes for products already product-patented, to market the products, and

"WHEREAS, The result of this procedure has been to permit foreign manufacturers to both process-patent and product-patent medicinal chemical compounds, estop American invention and exploit the American market by demanding higher prices for such products than those exacted in the countries of production, therefore, be it

"Resolved, That the Pennsylvania Pharmaceutical Association in annual meeting assembled hereby petition the Congress of the United States to enact such legislation as will give the President of the United States or the U. S. Commissioner of Patents authority to *suspend a product-patent if it can be shown that the product patented can be made by a process of manufacture that is entirely new and original*, and

"Resolved, That the Secretary of this Association be directed to send a copy of these resolutions to the President of the United States and the U. S. Congress in session now assembled."

NEW PROOF OF THE PANCREATIC ORIGIN OF DIABETES.

The evidence now seems conclusive that diabetes is a result of a pancreatic fault, and while it is admitted that this may not be the sole disorder in every case, it is the most prominent factor in the majority of cases, and present in every case.

Weichselbaum, after years of study and the examination of the pancreas in 183 cases of diabetes, states that "in every one of this series" he found distinct and characteristic lesions in the islets of Langerhans, while in a larger series of control cases, representing many different diseases, no corresponding changes were found. He suggests that the reason some of these lesions have been overlooked by others is that in hydropic degeneration, if the tissues have not been properly prepared and preserved, these lesions are easily overlooked.

The internal secretion of the islands of Langerhans of the pancreas has been designated by Starling as "the anti-diabetic hormone," by others as "the pancreas-co-ferment," "the internal secretion of the pancreas," and as "the pancreas hormone."

A new demonstration that diabetes is due to absence of the internal secretion of the pancreas, and may be corrected by addition of this secretion, to diabetic blood has recently been made by Knowlton & Starling—*The Metabolist*.

Papers Presented to Local Branches

LABORATORY EQUIPMENT FOR THE MANUFACTURE OF GALLENICALS BY THE RETAIL PHARMACIST.*

E. FULLERTON COOK, P. D.

The first consideration in planning for the equipment of a small laboratory may well be the space available for the work.

If the opportunity is given to begin with an empty room, ideal conditions are at hand, but most frequently manufacturing is carried on in a retail drug store as an adjunct to the prescription counter and during the odd moments available between customers and other store duties.

In either case, the following general principles may be kept in mind and made a feature of the department if their value is recognized and the proprietor is in earnest.

Cleanliness. Conditions should be such that cleanliness in the work will be possible. Dust should be eliminated in large measure and all equipment, floor, etc., thoroughly scrubbed regularly and frequently. This will help greatly in reducing loss and deterioration in preparations from the introduction of microscopic growths and is but fair to the public.

For health, as well as economic reasons, a rigid maintenance of sanitary conditions is as important in preparing medicines as in making foods.

Arrangement. The second principle, worthy of constant attention, is the arrangement of stock, library, working counter, sink, etc., in such a way that a minimum waste of time and energy results.

"Efficiency" is the keynote of big successes, and it should be written large in every pharmacy today, and the managing head should be studying every day's work and particularly routine duties, with the definite purpose of reducing lost motion and stopping unnecessary waste of energy, time and materials.

A kitchen cabinet has been put on the market which is well worthy of study in this connection. A working counter is provided and above and below in closets, open shelves or drawers are arranged every form of apparatus likely to be needed, and also a stock of the more frequently used materials.

At very little expense this plan could be adapted to a working counter for the pharmacist and by a careful study of the needs he could have within reach every kind of apparatus required for common operations. This could include distilled water and alcohol made available at a small spigot connected with the supply. The latter should be a key spigot to prevent waste or theft.

Provision could be made for the disposal of waste materials by having an opening in the counter above a galvanized iron can.

* Read before Philadelphia Branch A. Ph. A.

The sink with draining board is an important adjunct and should join the working counter on the right or left, or preferably be immediately back of the operator, requiring only his turning to be made available. This sink should be deep, to avoid splashing, and to afford, when filled with water, a satisfactory place in which to wash bottles, apparatus, etc.

Probably one of the best forms of sinks available is a well-built wooden box, lined with sheet lead. The spigots should have a section of rubber hose slipped over the opening and this combination, lead and rubber, will prevent many breaks in glass apparatus. Hot water should be provided if possible at this sink, as its uses are many and the convenience great. A water-back can be fitted into the furnace at little cost and will give quantities of hot water throughout the winter, and a small laundry stove, burning little coal, or a small gas water heater, will help out in the summer.

Hot water is an essential also at the soda fountain for the proper cleansing of glasses, and the same heating plant will serve both purposes.

Apparatus. He should also provide sufficient apparatus to do the work he is planning and accurate measuring and weighing facilities.

Executive Department. The trained pharmacist will not lose sight of the brain part of his equipment. This means a desk and bookcase with some plan for keeping records, formulas, costs, etc., and a library more or less extensive.

These few general principles are applicable to all conditions under which manufacturing pharmacy is carried out; they are only different in the extent to which they are applied.

They may be introduced to advantage at the working counter of long-established stores, in those just being opened, or in a laboratory especially planned for manufacturing.

Now as to the detailed equipment: it is difficult to prepare lists of necessary apparatus since the requirements will vary as the kind of manufacturing to be done in each store varies. I might venture to name a few essentials for the making of U. S. P. and N. F. galenicals, however, although the list will be too long for many and fail to provide the needed equipment in other cases.

It is true, however, that the efficient worker needs but little complicated apparatus and obtains results from the simplest forms of equipment. There is one place, though, where no pains should be spared, namely, in the selection of weighing and measuring facilities.

Measuring. Be sure that graduates and measuring vessels are accurate. It is desirable to have at least

- 1 pipette (1 cc. in tenths).
- 1 pipette (in minims).
- 1 15 cc. graduate, conical.
- 1 1 oz. graduate, conical.
- 1 250 cc. graduate, conical.
- 1 8 oz. graduate, conical.
- 1 500 cc. graduate, cylindrical.
- 1 1 pint graduate, cylindrical.
- 1 1 quart copper measure.
- 1 1000 cc. copper measure.

When measuring small quantities of oils the custom of making dilutions in alcohol (say 10 per cent. dilutions), should not be lost sight of. This will often insure an accuracy in measuring which is not otherwise obtainable.

Weighing. It is very desirable to have a good laboratory balance. Several styles, at reasonable prices, having a slide weight for taring bottles, dishes, etc., are available. This is a great convenience, as many official preparations, solutions, ointments, etc., are made up to a definite weight.

If this form of balance is not provided, but only the counter box balance,, two cans of suitable size, containing sand or shot, can be used satisfactorily as a tare.

It is presumed that the pharmacist will have the smaller, accurate balances for other weighings and would not duplicate these for his manufacturing work.

Heating. Gas is now very generally available and, where it is at hand, a bunsen burner and a one, or preferably a two-burner, gas stove should be provided.

A large sheet-iron gas oven, for a two-burner stove, will be found of much service in many operations. It can be used for making effervescent salts, as an air-bath in evaporating fluidextracts and extracts at low temperatures, for sterilizing glassware and as a protected area in which to prepare sterile preparations.

A water-bath should also be provided. This need not be expensive or elaborate. For years we have used with much satisfaction a water-bath made from an enameled bowl, such as is sold for kitchen use, supporting the dish, beaker or flask in the bowl by a brass wire frame made like a triangle from three pieces of stiff wire with the ends twisted together and bent over the edge of the bowl. This seems to answer every purpose of a water-bath and the bowl can be bought in any size up to two gallons.

Mixing. An assortment of mortars and dishes should be at hand. The kinds will depend on the particular needs. Porcelain dishes should be used for strongly acid or alkaline solutions, but the enameled bowls to which reference has been made, can be used for moistening drugs for percolating, for making ointments, and in many other ways.

Spatulas, steel and rubber or wooden, should be ready for use. Some of the kitchen wooden-ware now offered for sale can be used in some cases where steel is not permitted.

Sifting. Several sizes of brass sieves will be found very useful and also a bolting cloth sieve where tooth powders, tooth pastes, toilet powders, etc., are being made. Such work should be done in an enclosed box if possible and an ingenious worker will readily provide an apparatus in which the sieve slides on strips inside a closed box.

For those who make larger quantities of powders requiring mixing and sifting, there are excellent and not very expensive outfits for sale.

Percolating and Filtering. Several sizes of both conical and cylindrical percolators will be of use, and also a metal (tinned-iron) percolator for such drugs as are to be exhausted by a hot menstruum. The receiving bottle for the percolate should be as nearly closed as possible, and a good plan here is to insert very narrow-necked funnels in the bottles. This permits the percolate to enter but practically prevents evaporation.

Funnels of various sizes will be needed, and covers for these should always be used. Flat white enameled lids or dishes are excellent for this purpose and are inexpensive, and may also be used for percolators. What has been said about the receiving bottle for percolates applies equally to filtrates.

For holding these percolators or funnels a good plan is to have a shelf strongly supported by brackets or a base, arranged along the wall. At any planing mill round openings of varying sizes can be cut in this board shelf and percolators or funnels can rest in these holes.

If any amount of simple syrup is being used either in the pharmaceutical manufacturing or at the soda fountain, it will prove economical to install one of the special forms of syrup percolators now on sale.

Macerating. For macerating drugs or dissolving sugar in official syrups where cold processes are required, the five-pint or smaller glass-stoppered, tincture, shelf bottle is particularly well suited.

No store should tolerate the custom of using a wide-mouthed confection tablet jar, and closing the opening with the hand when shaking. It is unsanitary and wasteful.

Grating and Grinding. The cylindrical grater known as an almond grater, sold for household use, having a hopper, a wooden block to press the material against the cutting surface and clamping to the table, will be found a great convenience in any store.

It may be used to advantage in reducing camphor to small particles for solution in oil and is particularly adapted to the reducing of cocoa butter to a state suitable for hand or machine-made suppositories.

Speaking of mills, an inexpensive and efficient form for brittle substances is now offered, called the Quaker City Mill No. 4.

For drug grinding the use of a hand mill is very laborious, but at times of great use. Many forms are now for sale. The larger stores can have an electric motor for such work or one of the small gas engines so extensively sold for use on the farm. If such power is available, it may be applied to tablet making machines and also to the churning of ice cream if the soda fountain business justifies it.

An iron mortar and pestle will often be called into service if the operator is not depending upon a drug miller to supply his raw materials in comminuted form.

For some purposes, notably vanilla, a meat chopper is very satisfactory for preparing the material for maceration.

Ointments. In preparing ointments thorough rubbing is essential. If large quantities are to be handled, a "paint mill" should be used, connected with power, but for the usual quantities made in a store a wide, shallow dish or a large plate of ground glass is best. The rubbing of an ointment in a mortar rarely proves satisfactory in my experience.

Distilled Water. A small automatic water still will be found of great convenience, since the character of many preparations is notably improved by the use of pure water, and a liberal supply is necessary for the best results.

Thermometers. Many preparations are spoiled because the temperatures directed in the formula are not maintained. Expensive thermometers are not necessary for most manufacturing work, although there should be a standard.

tested, thermometer at hand for checking up marked errors in the readings of a cheap thermometer.

The so-called "dairy thermometer" is useful for many operations where an error of a fraction of a degree may be ignored. If a section of rubber hose is slipped over the mercury bulb it will prevent many breaks.

Finishing packages. It is desirable that the pharmacist should learn to wrap packages of pharmaceuticals in the so-called onion-skin paper. This protects the package from being soiled, and being transparent, saves the cost of a second label.

The Library. This has been left until almost the last, but it is of first importance. Just what books it should contain will depend chiefly upon the inclinations of the pharmacist, his training and the scope of the work he plans. It should include, without question, the latest editions of the United States Pharmacopoeia, National Formulary, New and Non-Official Remedies, a Dispensatory, a good Pharmaceutical Formulary, a Text-book on Pharmacy, a book of Synonyms in foreign languages, a book on Toxicology and Doses.

To this may be added many additional reference books, as Foreign Pharmacopoeias, Foreign Formularies, Foreign Text-books on any of the subjects connected with Pharmacy, General Receipt Books, Proceedings of the A. Ph. A., files of Drug Journals, current Drug Journals, books on Chemical Subjects, books on Botanical Subjects, books on Commercial Pharmacy, etc., etc.

Records. Suitable provision should be made for the records of formulas, cost, quantities made, etc. These may take the form of bound or loose-leaf books—or card index outfits. The small loose-leaf ledger, made by the John C. Moore corporation, is inexpensive, serviceable and well adapted to the keeping of laboratory records.

Quality. These statements would not be complete without a caution about the quality of the materials selected for preparations. The retail pharmacist is in direct competition with large manufacturing pharmaceutical houses and unless quality is maintained, his experiment in manufacturing will prove a disappointing failure.

Also, after providing high-grade raw material, see that the official formulas are closely and accurately followed. Failure to obey this point is a frequent cause of unsatisfactory products.

Chemical Analysis and Microscopic Examination. If our pharmacist is planning to analyze and pass upon the quality of all raw materials to enter his preparations and then standardize the finished products where analysis is possible, additional equipment will be required, but it is not the purpose here to enter up that phase of the subject.

Notwithstanding this rather lengthy presentation of this subject, the cost of such an equipment, for thoroughly satisfactory work, is not large, and when all has been summarized its greatest importance is the calibre of the man who will do the work, and this part of the equipment is frequently waiting only the word of encouragement and the directions to go ahead.

ECONOMIC ADVANTAGES IN THE MANUFACTURE OF GALENICALS BY THE RETAIL PHARMACIST.*

ROBERT P. FISCHER, B. SC., PH. G., PH. C., PHAR. D.

It seems rather strange that groups of pharmacists all over the country are at this time discussing whether or not they can profitably carry on their profession as it has been taught them; yet that is exactly where pharmacy stands today. Many a pharmacist is today debating whether he shall let the manufacturer take care of what was once his profession and devote himself entirely to merchandising, or whether to continue the rather one-sided struggle.

In the symposium on "The Cause of the Commercial Trend of Pharmacy," presented at the sixtieth annual convention of the American Pharmaceutical Association, one pharmacist ventured the opinion that the underlying cause of this state of affairs was the activity of the manufacturing pharmacist. He further stated that the aggressive and extensive manufacturers had progressed so far in the manufacture of remedies which the pharmacist had formerly compounded himself, that it left very little for the real scientific dispenser to accomplish. In looking over fifty prescriptions compounded on a certain day at one of the Denver stores, he had found that approximately half of them were already prepared. The prescription clerk in these cases used his pharmaceutical knowledge to scientifically pour the contents of one bottle into another and properly label the product and hand it over the counter.

I, for one, do not place much blame upon the manufacturers for conducting their business as they have conducted it. They have a legitimate place in the profession of pharmacy. They have a perfect right to be progressive; and that is exactly where they have outclassed the retail pharmacists of this country, whom I blame more than any other group of men for the present status of pharmacy in the United States.

The average retail pharmacist is a fairly intelligent and educated man. He has been properly instructed in the methods of practicing his profession, and is therefore fit to compound and prepare profitably, with but few exceptions, anything that the manufacturer can compound and prepare.

I admit that the retail pharmacist cannot standardize his preparations physiologically, and further, that the average retail pharmacist has neither the proper equipment nor the time, to properly assay drugs. This work, as well as any other which the pharmacist would conduct at a financial loss, belongs in the field of the manufacturer.

The only way in which the manufacturer encroaches upon the field of the retailer is by preparing and exploiting many of the preparations which really belong to the retail pharmacist alone. This, however, was not brought about in one day, it was not brought about by the superior intelligence or education of the manufacturer, nor was it brought about by the superiority of the manufacturer's preparations over those made by the retail pharmacist. It was brought about

* Presented to the Philadelphia Branch of the American Pharmaceutical Association, May 6, 1913.

by the pharmacist's lapse into a state of inaction and the labors of the manufacturer during the sweet repose of the pharmacist.

On the whole, the manufacturer's methods have been fair. He has become the friend of the physician, and has usurped the position of the pharmacist in this respect. The question now is, can the pharmacist regain the friendship of the physician? My answer is that he can, and I base this answer upon the fact that many pharmacists have never lost this friendship, and many who have had a rude awakening are striving hard to regain it and are successful.

How can the pharmacist gain or regain the friendship of his medical brother? There is one way, and that is to prove that he is capable of taking care of the physician's wants. This implies, not only the necessity of being able to properly compound prescriptions and the preparations which enter them, but also the ability to keep pace with the newer *materia medica*. The pharmacist must use his education in making up new combinations of drugs, of good appearance and palatability. He should make it a point to read up the medical as well as the pharmaceutical journals, and anticipate the physician's wants in the line of newer remedies. It stands to reason that if the agent of the manufacturer can gain the ear of the medical profession and expound the virtues of his particular remedies, that the pharmacist can do the same and more, for he is able to speak intelligently of the method of preparation and administration of the remedies concerned.

Merle M. Burdick, of Chicago, in a paper entitled "Palatable Medication from the Manufacturer's Point of View," states that "In making standard pharmaceutical preparations in common use, he (the pharmacist) cannot equal the pharmaceutical manufacturer in economy of production or in the uniformity of product. The latter's automatic emulsifying machines permit of regulation of temperature and speed, resulting in qualities unattainable otherwise. His elastic capsule machine encloses the disagreeable oils and balsams. The automatic capsule-filling machine accurately fills many thousand a day—all of these things and many others, the manufacturer can make and furnish to the pharmacist at a cost so slightly above that of the material used, that the pharmacist loses valuable time and money not to employ them." With most of this I cannot agree. Where is there a physician who would not rather have a fresh emulsion of Cod Liver Oil put up for his patient by a retail pharmacist, than prescribe that of the manufacturer, which, though prepared accurately as described above, may stand on the shelves of the store for months or years before it is used. Of course, the physician will not think of this, nor will the manufacturer send him literature covering this point. It is up to the retail pharmacist to educate the physician along these lines, and to show the latter his own products. I need not give you figures in order to convince you that it costs much more to buy emulsions than to make them yourself. As far as the preparation of capsules, both elastic and hard, is concerned, what is the business of the pharmacist, if it is not putting up such prescriptions carefully and accurately, and how can he spend his time more profitably than at just this sort of work? Here again the physician would much rather prescribe his own formula to fit the specific case, were he sure that it would be put up just right, rather than to have the patient use the ready-made preparation, which might contain some ingredient that is undesirable.

Adam B. Heckerman, in a paper presented to the Pennsylvania Pharmaceutical Association and entitled "Should the Retail Pharmacist with a Small Volume of Business, Manufacture His Own Tinctures?" shows clearly that it is to the financial advantage of the retail pharmacist to prepare the majority of his tinctures. Mr. Heckerman gives the catalogue price per pound, and the cost of manufacture per pint of twenty-seven tinctures and finds that he gains from two to thirty cents in all but three cases, by manufacturing tinctures himself, the exceptions being Tr. Aloes and Myrrh, Tr. Asafetida and Tr. Iodine. However, the cost of container has not been added to the manufacturers' product and that should also be added to the gain column. Alcohol was purchased at the cost of \$0.39 per pint and the drugs used were standardized and tested, and purchased mostly in one-pound lots from jobbers. The time consumed in the manufacture was computed at \$0.55 per hour. Mr. Heckerman accounts for the apparent loss on Tr. of Asafetida by the advance in price of Asafetida since the manufacturers' price list of tinctures was published. Tr. of Iodine would have shown a gain had the Iodine been purchased in one-pound lots instead of in quarter-pound lots.

These figures, then, represent the economic advantages of manufacturing tinctures even in a small way and prove again that the competition between manufacturer and retailer is not as one-sided as some of us believe it to be.

F. W. Nitardy, in a paper read before the Section on Practical Pharmacy and Dispensing of the A. Ph. A. at Denver, gives a comprehensive list of preparations, including elixirs, liniments, mixtures, ointments, powders, solutions, spirits, syrups, tinctures, vinegars, wines and waters, which are made at his establishment at a cost less than that for which they can be purchased from manufacturing houses. In arriving at the cost of manufacture of his preparations, Mr. Nitardy adds to the cost of the materials used, the cost of time necessary to make the preparation figured at \$0.50 per hour, and a further 10 per cent of the total of these two items to cover "overhead charges." I have brought this list with me tonight and shall quote the cost of preparing one or two preparations of each class mentioned as compared with the price of the same preparation according to the manufacturers' catalogues.

	Cost of own make	Manuf. Cost	
		A	B
Elixir Aromatic, U. S. P., per gal.....	\$2.25	\$3.30	\$2.70
Elixir Digestive Comp., per gal.....	2.20	2.45*	2.63
Liniment, Soap, U. S. P., per pint.....	.37	.....	.56
Mixture, Glycyrrhiza Comp., U. S. P., per gal.....	1.05	.....	2.25
Ointment, Iodine, U. S. P., per lb.....	.70	.....	1.13
Ointment, Rose Water, U. S. P., per lb.....	.60	.....	.94
Solution Iron and Ammonium Acetate, U. S. P., per pt..	.12	.....	.56
Solution Potassium Arsenite, U. S. P., per gal.....	.50	.....	1.60
Spirit Ammonia, Aromatic, U. S. P., per gal.....	2.60	.....	3.90
Spirit Nitrous Ether, U. S. P., per gal.....	3.50	.....	5.00
Syrup Tolu, U. S. P., per gal.....	1.00	2.31	2.25
Syrup Yerba Santa, Arom., N. F., per gal.....	1.65	3.40	3.55
Tincture Opium, U. S. P., per pint.....	1.25	2.06	3.00
Tincture Vanilla, U. S. P., per pint.....	.88	1.38	1.35
Vinegar, Opium, per pint.....	.95	.....	2.03
Water, Cinnamon, U. S. P., per gal.....	.40	.....	2.06
Wine, Antimony, U. S. P., per pint.....	.18	.44	.49

*Not claimed to be official.

†Journal A. Ph. A., Vol. 2, No. 3, pp. 316-317.

The manufacture of fluidextracts has long ago been relegated to the manufacturer and as he has better facilities for recovering the alcohol used in their preparation, he can probably prepare and sell them at a price which would be lower than the cost of manufacture by the pharmacist. But here again some manufacturers have taken advantage of the average pharmacist's dislike for the practice of his profession. We see many fluidextract bottles with labels upon their back bearing printed formulas for the preparation of the tincture, the infusion or decoction, and sometimes the syrup of the drug in question. Owing to this circumstance the fluidextract bottle has replaced the Pharmacopœia in a good many stores. How an educated pharmacist can conscientiously prepare an infusion from the fluidextract of a drug which may have been extracted with strong alcohol is more than I can explain; it can hardly be lack of knowledge, so it must be mostly laziness.

Just as soon as the pharmacists as a whole will realize that in order to make the professional side of their calling pay, they must practice "real" pharmacy and let the physician know that they are practicing "real" pharmacy, just so soon will pharmacy come into its own.

I have tried to show in this paper that "real" pharmacy can be practiced to commercial advantage, and have given you proof of this fact by submitting the statistics made by men who are actually engaged in the practice of pharmacy. Furthermore, I have tried to point out how our preparations made in the store can be disposed of to commercial advantage, and if this paper will help in a small way to bring the pharmacists generally to the realization that ethical pharmacy can be put upon an economic basis it will have fulfilled its mission.

PACKAGING AND EXPLOITING COSMETIC PREPARATIONS BY THE RETAIL DRUGGIST.*

MELMOTH M. OSBORNE, PH. G.

This subject could not be exhaustively treated in a paper forming, as this does, only a part of an evening's work—it requires an evening alone, and so I can treat it only as to the general principles involved. Any one committed to them, however, will be apt to find the way out of any difficulties of detail.

The preparation of cosmetics for the purchaser, following their manufacture, should unquestionably show care for their appearance, wording of label and convenience for use. Assuming that the article itself is attractively prepared and is agreeable to use, it will have poor opportunity for success—or at least its climb up to that desirable point will be over more rugged ground—if it is not attractive in appearance.

And if it is attractive and desirable because of its virtue, it may never be sold a second time to the same customer if not put up conveniently.

Not infrequently an article will sell to one entirely unfamiliar with its virtues,

*Read before Philadelphia Branch A. Ph. A.

solely on its superior appearance—to which both label and container contribute—over another similar article not so attractive, but which may have more merit.

I have long ago given the subject of the label generally more than ordinary attention; indeed, compared with the average druggist, extraordinary. The average druggist, or "some of him," does not care to know, does not know, or at least doesn't care what his labels are like and is apt to imagine as artistic what, if large enough, might perhaps make a good circus poster—but label, never! Art is not a splurge of color or colors, nor is it an excess of engraved curves and lines. The best art is simple, color is subdued. So with a label. Appropriateness is as applicable to labels—all labels—as to anything else. There are better ways of showing patriotism than by using a red, white and blue label.

Primarily and always the name of the article should be most prominent; always later, never first, should come the maker's name, and more appropriately and less conspicuously a description and directions, and last the maker's name and address.

No more should be put on the label than is necessary to concisely state the *facts*. Enlarging on imaginative properties not possessed by the article, is only another way of prevaricating. Unless an artist, or one with decided artistic taste, designs the label, don't use colors. A beautiful face or some rich, soft, but never gaudy colors, may appropriately be used for some cosmetics, but if they are not almost perfect leave them off. A soft-toned paper will often give a fine effect as a background to neat printing, in black, brown or other color, and be far superior to any attempt at something artistic or showy which falls short of a high standard, and many of the customers who almost alone use cosmetics will see it very quickly. A neat, appropriate label is just as impressive in its way as good stationery.

Several points must be considered in the container besides the size, whether box, bottle or jar. Its appearance also counts for much. It will often be seen before the label on it, and no matter how good the label, it will detract from effect if not in agreement with it. It is not wise, however, to give too much jar and too little contents. The customer gets tired of paying for jars of no use when empty. Simplicity is appropriate here, too. Occasionally an attempt at originality is highly successful from that point of view—but a failure from every other. Originality along good lines is desirable, of course. The opal jar is justly a favorite, as is the aluminum lid.

The bottle has, probably, more variety given to it than the jar, but the same observations apply to it. A very deeply panelled bottle means charging a good price for a poor bottle and it always seems to me in such cases poor quality. The law should forbid putting out bottles that pretend to hold more than they do. I have rarely seen a handsome panelled bottle. That, of course, is only an opinion, but I do think a bottle entirely without panels, of good glass and either round or square and well proportioned, will show the contents better and present a handsomer appearance than any panelled bottle ever made.

Containers should be convenient. If jars, they should be very wide-mouthed and not too deep, so that all the contents may be reached. If bottles for a thick, creamy substance, narrow necks should be avoided. If corks are used they should be of the best quality as they will be frequently handled before the bottle

is exhausted. It is poor policy to use a poor cork that breaks the first or second time used or to use a short one forced in to level of lip, unless an extra cork is provided. Where possible, a sprinkler top should be used. Where the material is suitable the tube has proved very desirable in many cases, being convenient, and preserving the contents satisfactorily, but it cannot be made as attractive as other containers, this being practically limited to the label.

For the retail druggist who puts up a cosmetic for sale only in his own place, I think a carton is a mistake. He can display the article much better uncovered. It is no doubt common experience that the jar or bottle must often be removed from the carton to show customers, and I think it is a mistake to seal a jar of cream or ointment so that the contents cannot be examined, especially with a new article, the reputation of which has still to be achieved. I have known a choice of another article to be made in consequence. The carton, however, is very convenient and useful in practice for distribution purposes, in large quantities, saving time in handling, and breakage, and space in packing. But all that applies to the label, as to neatness and appropriateness, applies to the carton which is temporarily seen in display in places of the container itself, except, of course, in the cases where it is used only as a packer for protection.

Unquestionably, in my mind, the pharmacist should study *every point* to succeed in replacing the numerous preparations on the market by his own, for they *should* be better, and with good articles, the composition of which he knows, he has talking points in every detail from the purchase of the raw material to the wrapping of the product ready to hand to the customer, and while he is talking with his mouth the articles should be talking and backing him up by their appearance, proving the adage that "deeds are greater than words." The many on the market are made to sell—so are the pharmacist's—but with the difference that he is there to stand back of them and known in his community and his character and his goods should both be on a par—of the highest. No one knows what the ordinary market goods may be, we all know how fraudulent *some* of them are.

Circumstances alter the conditions of exploiting an article of any kind, and every community has its peculiarities which have more or less bearing on what should be done, nevertheless there are general principles to follow, applicable to all cases. The one aim is to reach the desired customers, interest them and get them to make the first purchase, when if the quality—it always comes back to that—is there, future purchases take place automatically and lead to their friends becoming interested.

A good display in the drug store or window—preferably both—is seen by everybody entering. That has a double advantage. It tells that you have it and what it looks like, besides, many see it who have no use for it, but will tell others.

Sampling with exact duplicate of the actual article, except as to size, is an excellent and superior way of advertising it, but it is expensive and will not pay except the community in which it is done is large enough to warrant the double cost of the samples themselves and their delivery, and it is wasteful unless some system is adopted which insures practically all of them being delivered to persons likely to use such an article. Delivery at doors, of unaddressed articles means

much waste through the gross carelessness and indifference of the ordinary messengers used, as well as their being taken by servants or others who may receive them. An article addressed to a person who knows the sender or knows of him, or that he is in the immediate neighborhood, will be more impressive than if it was merely left at the door and got into her hands by chance more than by good management. The parcel post seems an excellent way to overcome this trouble and thus make a direct appeal to the party desired. It is not at all necessary to limit the list to known customers. A little effort constantly kept up for future use, will produce a list sufficiently selected from your neighborhood to make you reachable, and yet not be wasteful to you.

A well-worded, short circular, accompanying the sample and showing why *you* are better able to make such an article and that you stand by it, will greatly help. But a check should be kept on results, showing who do not respond, and later another sample be sent.

Ordinarily it is not advisable to send several kinds of samples at once. Better separate them by short periods, as it makes more impression. If the sample reaches the right party—that is, one likely to use such an article—and is liberal enough in quantity to allow fair trial, this is one of the very best methods of advertising, provided always the article is right from beginning to end.

Sampling can be advantageously done directly to customers by enclosing with other articles, by personally asking them to try it, and by leaving the samples in a convenient place to be taken by any one, but this latter way is apt to be wasteful, as many people will take samples because they cost nothing, not because they want them.

When a customer asks for a certain article give it, but you may also give your sample. When they don't know what they want give yours if you know it is right.

Each one must decide for himself whether he desires to make a special push on such an article and whether newspaper advertising will pay for its cost, which ordinarily is considerable, and unwarranted unless the article has real merit, the advertiser brains and the maker capital, but this takes me outside my limit which confines me to the retail druggist. Local papers in the territory covered by the maker may, however, be used advantageously and at moderate cost.

Many large manufacturers of cosmetics have learned the lessons I am trying to impress and those that have learned it best are among the leaders of the world in their line. The French manufacturers probably lead them all in beauty of labels and packages, as well as quality. But there are a few in this country who are doing most excellent work in beautifying their packages.

The pharmacist cannot assume the expense they do and need not, for local purposes, yet he can turn out packages neat, but not gaudy, attractive and convenient.

It might have been interesting to illustrate with examples, but neither my time for preparation nor yours now would permit this.

I have assumed that few, if any, retail druggists would expect to do a very widely extended business in such preparations, beyond their own territory. If that is done at all successfully it will mean all he can handle in addition to his

other regular business. When he goes beyond that he becomes a wholesale manufacturer and the exploiting is a far different matter. But not a few of the best known manufacturers are realizing the value of the personal appeal referred to above and most druggists must be familiar with the begging appeals made to them for their mailing lists. Since it is noticeable, that the best of them are giving much attention to appearance, size and convenience of their packages, there is little use in a retail druggist undertaking to put out such preparations unless he can equal or surpass the best on the market.

DRAWING POWER OF THE WORDS "DRUG STORE."

Commercialism in pharmacy does not exist to an extent to make public references to it frequent.

This may be a startling declaration, but one, we believe that no one can successfully deny. It should be placed alongside of another unequivocal statement we have made, namely, that pharmacy is a profession. Conducting a drug store is not practicing pharmacy. The over-commercialization of the business carried on under a drug-store sign is the thing that is in the minds of people who inveigh against what they call commercialism in pharmacy. Let us get our basic facts well in mind, and then we shall the better be able to go into an intelligent discussion of side issues.

There are two separate and distinct reasons for the recent very noticeable growth of the commercial side of the drug business. One is the desire of men in the drug business to make more money; the other is the desire of men to make more money by going into the drug business. In the case of druggists already in the business, their commercial trend is the result of a natural growth; with the others it is a wish to take advantage of a situation which has presented itself with a certain degree of suddenness. In other words, men with the commercial instinct highly developed, seeing that druggists who possess that instinct and are guided by it have made a success, have determined to put more of the commercial feature into drug stores and make a larger success. So far as the real drug end of the business opened by some of these commercially minded men is concerned, it might just as well give place to some other line, but for the fact—and this is the point we desire to bring out—that there is something about the words "drug store" which seems to have a magic drawing power with the public.—*Druggists' Circular.*

Of General Interest

ORGANIZATION OF A NATIONAL FOOD TRADES CONFERENCE.

At the close of the Convention of the National Wholesale Grocers' Association at Atlantic City during the week of June 2d, a new and important member of the family of food control associations was born—the National Food Conference. Its aim is to unify the efforts of all the leading food trade associations in the common cause of promoting uniformity of food legislation.

This organization was called by the legislative committee of the American Specialty Manufacturers' Association for the purpose of discussing plans for bringing the common interests of all lines of food production and distribution in the way of food legislation into a common effort for reasonable laws. There is less opposition to laws affecting food in themselves than there is diversity of laws. It matters little to the food producer what the law is—he can adjust details in that respect with little trouble—so long as the Federal laws and the State laws agree. If he must have differently prepared products for each State, if the labels must be different in one State from another, the process of compliance is very cumbersome, expensive and difficult. So, with uniformity as the keynote, the convention was called. It comprised the following representation:

American Specialty Manufacturers' Association—J. E. Linihan, Louis Runkel, A. C. Monagle, William Beverly Winslow, C. W. Dunn.

National Wholesale Grocers' Association—William C. Breed, Dana T. Ackerly, D. C. Shaw.

National Retail Grocers' Association—John A. Green, C. E. Bemert, G. Reddish, Secretary of the Denver (Col.) Retail Grocers' Association, editor of the *Denver Grocer*; S. Westervelt.

National Canners' Association—F. E. Gorell.

National Confectioners' Association—H. W. Hoops.

Cocoa and Chocolate Manufacturers' Association—Maurice Fieux, also S. S. Marvin, President Pennsylvania Chocolate Co.

National Coffee Roasters' Association—G. W. Toms.

National Association of Glue and Gelatin Manufacturing—Rufus W. Powell.

Flavoring Extract Manufacturing Association—W. M. McCormick, S. F. Irwin, of L. H. Parke Co.

Oyster Growers' and Dealers' Association of North America—Henry C. Rowe, J. R. McCleskey.

American Manufacturing Association of Products from Corn—W. P. Cutler, T. B. Wagner.

National Association of Ice Cream Manufacturers—W. J. Carlin, E. B. Lewis.

Mincemeat Association—Craig Atmore, J. E. Brick, H. C. Gutchers, W. B. Cherry.

There were also present: Walter E. Coe, Commissioner from Connecticut for the Promotion of Uniform State Laws; W. D. Waller, J. G. Wood, E. O. Grosvenor, F. A. Ledgerwood, J. C. Dow, A. C. Withington, D. C. Shaw, Victor Garrett, Andrew Ross, T. B. McGuire, T. J. Riordan, J. G. Gilfillan, T. G. Aulsbrook, S. A. Bixby, W. H. Lipe.

The National Association of Macaroni and Noodle Manufacturers sent a letter of approval and offering co-operation.

The conference was called to order by Louis Runkel, Chairman of the Legislative Committee of the American Specialty Manufacturers' Association. John A. Green, Secretary of the National Retail Grocers' Association was elected Secretary.

PLAN FAVORED BY ALSBERG.

After reading his address, the Chairman spoke of the conversation he had had with Dr. Carl Alsberg, Chief Chemist of the United States Department of Agriculture, favoring the uniformity of food laws, and

*Reprinted from the *Journal of Commerce* (N. Y.).

the honest cooperation of manufacturers of food products to attain such a uniformity. Letters were read from various State Food Commissioners—H. E. Barnard, State Food and Drug Commissioner of Indiana; S. E. Strode, Dairy and Food Commissioner of Ohio; Geo. B. Flanders, counsel, Department of Agriculture, State of New York; Hubert F. Potter, Dairy and Food Commissioner, State of Connecticut.

The following resolution was adopted unanimously:

"WHEREAS, Food control legislation, general and special, has been enacted by Congress and by the legislatures of all the states, and is now being actively enforced, and

"WHEREAS, Many manufacturers of and dealers in food products do an interstate business and are, therefore, subject to both such National and State regulations, and

"WHEREAS, This conference has considered the need for the value of uniform Federal and State laws relating to the adulteration and misbranding of food products, and

"WHEREAS, The uniformity of the food laws is recommended by the Commissioners on Uniform State Laws and by the American Bar Association, therefore, be it

"Resolved, That this National food trades conference hereby reaffirms its belief in food control legislation, which shall deal justly and equitably with the interests of the consumer and the trade as beneficent and necessary legislation, and be it further

"Resolved, That this conference hereby earnestly recommends that such food control legislation, National and State, be uniform, believing that such uniformity will equally benefit the consumer and the trade."

DATA ON NET WEIGHT LAW.

Charles Wesley Dunn, attorney for the American Specialty Manufacturers' Association, spoke briefly on the regulations to be promulgated under the national net weight law, requiring package food to be labeled to indicate the net contents; he pointed out the necessity for the early submission of the necessary data for these regulations by the manufacturers and explained that it is the intention of the Department of Agriculture to obtain as complete data as possible from the manufacturers, to conduct experiments and tests on their own initiative and to afford hearings to the trade when necessary. On motion of Mr. Dunn it was unanimously voted that a uniform form, which he then submitted to the conference, be suggested by this conference to the various food trades organizations for the preparation of this

data. He pointed out the value of such an uniform plan of collecting the data and the facility it would afford the national net weight committee in the preparation of the regulations.

The chairman of the conference appointed a committee of seven members to meet in the near future and to consider the advisability of cooperation between the various food trades organizations relating to the uniformity of the food laws and to devise some method of such cooperation, if sufficient of such organizations approve the plan, to report the same back to another meeting of this conference called for this purpose.

<>

NEW ENGLAND LETTER.

ERNEST C. MARSHALL, PH. G.

CONNECTICUT'S NARCOTIC LAW.

In order to be in the prevailing fashion Connecticut has recently put into effect its up-to-date narcotic law in the attempt to make that "Land of steady habits" steadier. The provisions of its law are similar to those of other states and to the proposed narcotic law which awaits the action of the National Senate at the capital. There is really something pitiful to me in the way in which leading druggists assist in the passage of these laws to prevent the sale of narcotics—laws which in their essence throw discredit upon the profession. I presume it is largely through the fear that if they show themselves antagonistic to the passage of such laws, they will expose themselves to the suspicion that they are of the liquor-vending, dope-selling class of druggists. Personally I believe all such laws foolish and unproductive of any good to the community. They are as silly as the laws of Connecticut and of Massachusetts passed in "the good old colony times" against the serious offense of lying, which offense appeared to be as common in those days as it is at present, or the law of the former State against lechery, which law resulted in Edmunds being whipped, Williams standing in the pillory and Starke being branded in the cheek, forced to pay a fine and made to marry one Mary Bolt, all this for doing offense with the said Mary, who the next year was whipped and banished for misconduct with another man. None of these laws prevented the growth in

the community of the evils against which they were directed. But poor mankind goes blunderingly along repeating the errors which the test of time might have shown to them, if they were not so wilfully blind, the folly of their courses. Sumptuary laws have been in existence since early Roman times, particularly those laws regulating the dress of women, and Puritan Massachusetts had a law preventing the use of "short sleeves whereby the nakedness of the arm may be discovered in the wearing thereof." The only result of such laws seems to be that we will soon have to pass a law to prevent the wearing of slashed and short skirts. Such is "the blindness of men's minds and the stubbornness of their wills," to use the language of the General Court of Massachusetts, that it seems as though it was only necessary to tell persons they shall not do a certain thing, to make them seek for some means to do it at once, and so it is that the very laws intended to prevent and oppose evils seem to increase them. In Prohibition Kansas, I am informed on the authority of a professor of one of its universities, that there is not the least difficulty in securing all the liquor one wants, except that one must know where to go to get it and I know the same thing is true of Prohibition Maine. Then is it not folly to pile law upon law, "Pelion on Ossa," in the vain attempt to regulate what it is impossible to regulate? By the provisions of the Connecticut law none of the drugs enumerated in the law,—a most liberal list,—can be sold except upon the prescription of a licensed physician, or by any one not a licensed pharmacist. Said prescriptions must bear the date of their writing and are invalid if written more than five days before being presented for preparation. They may only be filled once, shall be kept on a separate file, and the date of the sale, the name and address of the purchaser, and the name of the person making the sale must all be recorded. Believe me, they should have also required the personal description, with fingerprint measurements and thumb-prints of the purchaser and the seller, for otherwise how will they absolutely guard against fraud and misrepresentation and I shudder at the effect of such misrepresentation upon the morals of the State. Now, what will be the effect of such stringent regulations as those imposed by this law? Physicians, after being disappointed in securing a required remedy, be-

cause forsooth the date was not properly placed upon the prescription, or they have misspelled the name of the medicine or something or other, will cease to write prescriptions and will become dispensers, and heaven knows there are enough of those without adding to the number. All such laws should be opposed with all the force which druggists can muster, and if they will but exert themselves they can get together a mighty force, —not because they wish to oppose good legislation, but because they are opposed to vicious legislation which is inoperative and inefficient, and can only bring contempt upon the law-making power. It will be impossible for the United States to prevent the sale of cocaine and other drugs by its proposed law, even by the expenditure of a dollar for every grain sold unlawfully, as it was for Mrs. Partington to sweep back the rising tide with her broom. Desire will be stimulated by the difficulty of securing the drugs and that desire will in the majority of cases be satisfied as certainly as that Mrs. Partington got her feet wet in her fruitless labor. The good results from such legislation are absolutely none, and the evils it is intended to correct will be increased and exaggerated. A French marquise is reported to have exclaimed on drinking a glass of pure spring-water, "O, how much more of this would be drunk, if it were sporty to drink it," and, in so saying, she expressed in a terse manner the attitude of people toward the things which are forbidden them. There is a vein in most men and women which impels them to be a little sporty; to get out of the harness at times and let loose.

I thoroughly believe that there would be no more drunkards if the sale of liquor was entirely unrestricted, and that all attempts to restrict by rigorous law the sale of narcotic drugs will absolutely fail to lessen the number of so-called dope fiends in the country while imposing upon the already overburdened druggist a vast amount of useless trouble.

The druggists of Fitchburg, Mass., have been agitating the question of closing their stores on Wednesday afternoons during the summer months, in accord with the practice of many of the other retail dealers of that city. The arrangement is said to have been defeated because of the refusal of two of the Main street druggists to agree to it. This is decidedly a matter for regret, for it must

be apparent that every one concerned would be benefited if some relief could be had from the exacting hours of the drug trade. No valid reason now exists for drug stores to be open all of the time for the service of the public, and the benefit which would come to clerks and proprietors from the rest of a part of one day in the week would much more than compensate for any loss of business caused by closing the stores. It is hoped that the druggists of Fitchburg may be able to induce their recalcitrant brothers to join with them in so beneficent an arrangement and that from Fitchburg the movement may spread throughout the country.

MAINE.

Augusta. Nathaniel Johnson and J. Henry Gregoire have purchased the business of Bowditch, Webster & Co., at 220 Water street, and will conduct the business under the old name. Mr. Johnson has been with the firm of Bowditch, Webster & Co. since 1893, and Mr. Gregoire has been in business in this city for some twelve years.

Portland. The annual outing of the Cumberland County Pharmaceutical Association was held on July 31 at the Mitchell House in Scarborough. About 44 members were in attendance. The committee of arrangements was composed of the President, Frank H. Powers; Secretary E. W. Murphy, and Treasurer James A. Broe. A shore dinner was served and was followed by athletic contests.

Waterville. W. R. Jones sustained a loss of about \$2000 in a fire which almost destroyed the DeGruchy Co.'s block.

NEW HAMPSHIRE.

Dover. J. Edward Vickery was severely injured while riding in the car of Dr. George E. Tolman, by the car coming into collision with the car of C. C. Wilbur of Newton, Mass. Mr. Vickery's nose was broken and he received a cut on one leg which required five stitches to close.

VERMONT.

Mason G. Beebe was the representative of the State Board of Pharmacy at the Convention of the A. Ph. A. Andrew B. Anderson of Swanton represented the State Association of Vermont at the Convention of the A. Ph. A., afterward going to Cincinnati to the Convention of the N. A. R. D.

At the examination held by the State

Board on July 9, five candidates received certificates of registration as skilled pharmacists and two received certificates as assistant pharmacists. The board also cancelled nine certificates because of deaths and other reasons.

Baltic. V. B. Anderson was found guilty of violation of the liquor law and was fined \$75 and costs, the total of which amounted to \$99.64, on the 14th ult.

MASSACHUSETTS.

Boston. Louis K. Liggett was operated upon for appendicitis at the Corey Hospital on July 6th. Mr. Liggett is the President of the United Drug Co.

Lawrence. A. F. Ryder is erecting a block at the corner of Essex street and Broadway, which he expects to occupy with an up-to-date store about the first of September.

Lynn. James B. Small, one of our veteran druggists, is to be married in September to Ruth S. Wood, a prominent club woman of the city. Miss Wood is Secretary of the Outlook Club and Vice President and Secretary of the Houghton Horticultural Society.

Lowell. It is reported that A. M. Dows & Co. have purchased the store known as the Carleton & Hovey store in this city.

Salem. D. M. Foster, formerly of Lynn, has opened a store on Essex street, near the Salem Institute.

New Bedford. Charles W. Brown has leased the store on the corner of Purchase and Maxfield streets and will make extensive alterations in the property before opening it as a modern pharmacy.

RHODE ISLAND.

Providence. The West Pharmacal Co., composed of Daniel E. Smith, W. F. Smith and Thomas J. Dorney, has been incorporated with a capital stock of \$25,000, divided into shares of the par value of \$10 each.

The State Board of Pharmacy having cancelled several certificates of druggists for failing to pay their registration fee before July 1, were obliged to take action looking to the reinstatement of such pharmacists who offered apologies and requested such consideration.

Woonsocket. Berard & North opened their new store in the Daignault block on Monday, July 21.

CONNECTICUT.

Hartford. The Riker-Hegeman Co. opened a new store here on Saturday, July 19,

at 851 Main street. According to the figures given out by the managers the store had 11,221 customers on this day and the receipts of the store totalled the sum of \$2500. This is said to be the eighty-eighth store of this chain-store aggregation.

The Alderman Drug Co., of which the managers are A. P. Alderman and C. P. Sheldrick, opened their new store on the corner of Main and Pearl streets the latter part of July. The store is one most modern in every way and the company is to be congratulated upon its appointments and general appearance. A Lippincott fountain of most appropriate design is one of the features of the new store.

New Haven. Mr. James J. Eagny, for 22 years in business on Grand avenue, is now making an extensive tour of Europe.

Southington. Jackson, the druggist, of Cheshire Center is building a new store in Southington.

Stratford. Alexander St. John has purchased the drug store of William B. Tuttle and will unite its business with his business at the location of the Tuttle store.

Naugatuck. David Waltman has purchased the drug store of E. Whitten, located at the corner of North Main and Prospect streets, Union City.

Waterbury. C. B. Stricklin has purchased the Roberts store at 463 W. Main street.

Who among druggists has not smiled at the trite sign "Pure Drugs and Chemicals," or its companion, "Prescriptions a Specialty"? Yet these signs once meant just what they said, and if nowadays they mean little or nothing it is solely because the owners of the signs have not lived up to them. People are learning to discriminate, and whenever they find signs or advertisements that are meaningless they soon take their trade to a store where the signs do mean something. About the poorest investment that a druggist can make is paying out money for advertising space if he is not willing or capable of living up to every promise therein made.

One of the surest ways of destroying the value of advertising is poor service, and this definition includes a multitude of faults. No matter how cleverly written be the advertisement and despite the actual bargains given, if customers are met with indifferent, grudging service, if things are handed out to them with the air of selling the thing and getting done with the job, if the sale is made in such a manner as to impress the customer with the idea that as soon as the druggist has got his money he has no more interest in him, then this advertisement of the store itself more than destroys the value of the printed advertising used. In the final analysis of its value, advertising is something to induce other people to buy something the advertiser has to sell, either goods, service or brains. The druggist is not in that class which depends upon catching new "suckers" every minute. His business must be built up from the solid foundation of confidence and good service, and if his advertising is contradicted by his service his trade must depend on his cleverness in attracting transient purchasers. Every great retail business of today started in a small way, and every one which succeeded has succeeded because it lived up to its advertisements.—*American Druggist.*

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.



REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

- 100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.
- 200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.
- 50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.
- 100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.
- 200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.
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- 100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.
- 200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

WAMPOLE CONTRIBUTION TO PROCTER FUND.

Notice has just come to the Secretary's office of a contribution of One Hundred Dollars to the Procter Memorial Fund, made by Henry K. Wampole & Company of Philadelphia.



IOWA COLLEGE STUDENT WINS MEMBERSHIP PRIZE.

William Karl Kallman, 432 West Third Street, Davenport, Iowa, won nomination for membership and one year's dues in the A. Ph. A. in the competitive examination in the recognition and description of organic drugs at the University of Iowa College of Pharmacy. The prize was awarded by Professor W. J. Teeters.



UNIVERSITY OF NEBRASKA IN- CREASES REQUIREMENTS.

With the school year beginning in September the University of Nebraska will require a four-year (30 point) High School course of all students who matriculate in Pharmacy looking toward a degree. Conditional registration is permitted on 28 points, the condition, however, must be made up before graduation. This makes the requirements to study Pharmacy the same as for entrance to any other department of the University and gives Pharmacy the dignity of university standing.



THE NEW FOOD TRADES CON- FERENCE.

Stimulated by the example of the national organizations in forming a National Drug Trade Conference, the various organizations connected with the food trade have also formed a "Conference," the initial meeting of which was held at Atlantic City during the week of June 2. The announced purpose of the new organization is to work for uniform-

ity in food legislation and in the enforcement of such legislation.

There are many points upon which the interests of the food trade touch the interests of the manufacturers and distributors of drugs and drug products, and no doubt we shall hear more of the new Conference in the future.

An account of the proceedings of the organization meeting appears in another column.



ILLNESS OF LOCAL SECRETARY BURGE.

By a most unkind stroke of fortune Local Secretary James O. Burge was taken ill just on the eve of the opening of the Nashville meeting, and thus was unable to attend the sessions of the convention for which he had labored so unremittingly to arrange for.

To the delight of the members, however, Mr. Burge was able, before the end of the convention, to appear in the lobby of the hotel to receive the sympathy and good wishes of his friends.

The duties of the Local Secretary were ably discharged by Professor E. A. Ruddiman, who assumed the burden in addition to those of his own special committee.



ENTERTAINMENTS AT THE NASHVILLE MEETING.

The women of Nashville proved themselves charming hostesses for the visiting ladies of the A. Ph. A. The plans for entertainment had been so carefully made that every event was thoroughly enjoyed.

A committee of ladies was on hand as early as Sunday to welcome the arrivals and were as careful in looking after the comforts and pleasures of their guests as if they were entertaining in their own homes.

The President's reception was held on Monday evening in the loggia of the Hotel Hermitage which presumably all visitors attended with a large delegation of the local druggists and their families.

The morning of each day was left open for

the ladies to do their shopping. On Tuesday evening a theater party was given for the ladies at the Orpheum Theater, the play being "The Man on the Box."

On Wednesday afternoon, from four to six o'clock, a reception for the ladies was given at the Noelton Country Club, the trip to the Club being made by trolley.

On Thursday afternoon the entire association was given a trolley ride by the Board of Trade visiting the various points of interest in the city. A stop was made in Centennial Park, where a group picture was taken at the Parthenon. Following the trolley ride a box luncheon was served on the campus at Vanderbilt University. At eight o'clock the assemblage gathered in the chapel where they were entertained delightfully with a concert by the Fisk Jubilee Singers.

Friday afternoon the sessions were omitted entirely that all might go on the trip to the Hermitage, the home of President Jackson, which was provided by the Industrial Bureau of Nashville. The trip was made by train and trolley. In addition to inspecting the Hermitage, there was time for a pleasant visit to the gardens and grounds. Representatives of the ladies in charge of The Hermitage were there to give us historical facts and notes of interest in regard to the place. Mrs. Lawrence, the granddaughter of General Jackson, was also present to receive the guests.

This completed the program as arranged, which was thoroughly enjoyed by all taking part in it, but one of the most enjoyable features for the ladies of the convention were the many quiet visits among themselves, the making of new friends and the meeting of old acquaintances, all of which was added to by the charm and graciousness of the Nashville ladies who untiringly devoted themselves to the entertainment of the visiting women.

Through these pleasant associations the Nashville Convention will always live in the memory of A. Ph. A. women.

ANNA G. BAGLEY.



ISRAEL SCHWARTZ.



JOSEPH CARUSO.

BROOKLYN COLLEGE GRADUATES WHO WON A. PH. A. NOMINATION PRIZES.

UNITED STATES PUBLIC HEALTH SERVICE.

T. V. O'Gorman, Pharmacist. Granted 30 days' extension of annual leave on account of sickness from May 6, 1913. Granted 30 days' annual leave from June 5, 1913. June 18, 1913.

F. H. Southard, Pharmacist. Relieved from duty at Fort Stanton, N. M., and directed to proceed to Cincinnati, Ohio, and report to Passed Assistant Surgeon W. H. Frost for duty in the investigation of the pollution of navigable waters. June 28, 1913.

H. D. Leech, Pharmacist. Relieved from duty at the New Orleans quarantine station and directed to proceed to Fort Stanton, N. M., and report to the medical officer in charge for duty and assignment to quarters. June 28, 1913.

C. C. Cannon, Pharmacist. Relieved from duty at the Marine Hospital, Chicago, Ill., and directed to proceed to Fort Stanton, N. M., and report to the medical officer in

charge for duty and assignment to quarters. July 8, 1913.

J. A. Wolfe, Pharmacist. Granted 30 days' leave of absence from August 4, 1913. July 8, 1913.

H. D. Leech, Pharmacist. Directed to proceed to the Fort Stanton Sanatorium and report to the medical officer in charge for duty and assignment to quarters. August 18, 1913.

W. F. Macdowell, Pharmacist. Granted 23 days' leave of absence from August 18, 1913. August 19, 1913.

E. S. Maguire, Pharmacist. Granted 30 days' leave of absence from August 16, 1913. August 19, 1913.

E. M. Holt, Pharmacist. Granted 27 days' leave of absence from August 15, 1913. August 19, 1913.

RESIGNATIONS.

Pharmacist Harri D. Leech resigned, effective July 9 1913.

Pharmacist Charles H. Irwin resigned, effective August 6, 1913.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

DAHL, MARCIUS,
From Columbus, Ohio.
To residence unknown.

TYSON, LESTER R.,
From St. Louis, Mo.,
To Cheyenne Wyo.

LANGENHAN, H. A.,
From 901 University Ave., Madison, Wis.,
To Chemistry Bldg., University of Wisconsin, Madison, Wis.

RUSSELL, C. WILCOX,
From residence unknown,
To School of Mining, Queen's University, Kingston, Ontario.

MASON, JOHN G.,
From residence unknown,
To Behrens' Drug Co., Waco, Tex., General Manager.

ARMSTRONG, C. A.,
From Platt River, Mo.,
To Bonne Terre, Mo.

GOLDSTEIN, JACOB,
From residence unknown,
To Care The Savoy Pharmacy, Cairo, Egypt.

MURPHY, GEO. E.,
From Winthrop, Mass.,
To residence unknown.

CANNON, C. C.,
From Chicago, Ill.,
To Ft. Stanton, N. Mex.

EICHER, BENJ. L.,
From Chicago, Ill.,
To residence unknown.

LAMONT, WM. H.,
From Kansas City, Mo.,
To Care Meyer Bros. Drug Co., St. Louis, Mo.

BERKOWITZ, MORRIS E.,
From residence unknown,
To 410 Chestnut St. Philadelphia, Pa.

MOORE, FRANCIS,
From Bismarck, N. Dak.,
To residence unknown.

CONQUEST.

Sometimes when you are worn and weak with the struggle; when it seems that justice is a dream, that honesty and loyalty and truth count for nothing, that the devil is the only good paymaster; when hope grows dim and flickers, then is the time when you must tower in the great sublime faith that Right must prevail, then must you throttle these imps of doubt and despair, you master yourself to master the world around you. This is Conquest; this is what counts. Even a log can float with the current, it takes a man to fight sturdily against an opposing tide that would sweep his craft out of its course. When the jealousies, the petty intrigues and the meanness and the misunderstandings in life assail you,—rise above them. This is Conquest. When the chance to win fame, wealth success or the attainment of your heart's desire, by sacrifice of honor or principle, comes to you and it does not affect you long enough even to seem a temptation, you have been the victor. That too is Conquest. And Conquest is part of the royal road to Happiness—William George Jordan.

CHARACTER VERSUS REPUTATION.

"Reputation is what men say you are; character is what God knows you are.

"Reputation is seeming; character is being.

"Reputation is your photograph; character is your face.

"Reputation is manufactured; character is grown.

"Reputation is what comes over you from without; character is what rises up from within.

"Reputation is what you have when you come to town; character is what you have when you go away.

"Reputation is what you need to get a job; character is what you need to keep one.

"Reputation is what is chiseled on your tombstone; character is what the angels say about you before the throne of God."

It may not be within the power of every man to secure reputation, but it is, happily, within the power of everyone to have character. It may be built up stone by stone. It comes by forming ideas in the mind and carrying them out in practice. It is much easier to drift, hence character-forming is, in a sense, "work." But it is not hard work, though it does demand daily and hourly attention. A man must watch his thinking with care, and the doing will then be fairly easy.—*Ernest Wray Oneal*.

GETTING READY FOR NEXT YEAR'S MEETINGS.

Association meetings are over for this year, but it is time to begin getting ready for next year's meetings now. The real problem for most druggists is how to meet the expense of attendance, and no one need be ashamed to admit that this expense is a real reason why he does not attend association meetings, but if a little economy be practiced and a determined effort made it will be easy for every druggist to attend some meeting. A few dollars put aside monthly between now and next summer will provide the means for attendance, a hundred dollars will take one a long way, and no one need fear the expense of social display, for druggists are not usually "malefactors of great wealth" and avoid high-priced hotels and display. Begin saving now; it will be the best and most profitable saving one can do.—*American Druggist*.

DISLOYALTY.

That is the worst sin, in my estimation, there is. It seems to me that God forgives everything in the world except disloyalty. You talk about Judas Iscariot, you talk about Benedict Arnold, and you say they were traitors. They were not committing any great crime—greater in degree, perhaps, than you are and I am when we are disloyal to the people who are paying us for our service and giving us an opportunity to make good in life. It's the thing you want to avoid more than anything else, as it destroys the very integrity of the individual.—*The New Idea*.

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

The Sixty-First Annual Convention

Held at Nashville, Tennessee, August 18-23, 1913

MINUTES OF THE GENERAL SESSIONS.*

The Sixty-first Annual Convention of the American Pharmaceutical Association was held in the city of Nashville, Tennessee, the Capital of the State, beginning Monday, August 18, 1913, and lasting throughout the week. The Association headquarters were at the Hotel Hermitage, and the various sessions, with few exceptions, were held in the auditorium and other meeting-rooms of the Masonic Grand Lodge, on Capitol Boulevard, hard by the hotel. This was the first time in the history of the Association that it had met in the State of Tennessee, and the spontaneous and enthusiastic welcome accorded by the pharmacists of the city of Nashville and the State-at-large was a gratifying feature of the meeting. Likewise, the adjacent States were well represented, and the attendance, despite the fact that the meeting was held in the South in August, and during an exceptionally hot spell of weather, was nearly up to the average. The meeting was notable for the number of sessions held and the amount of work accomplished, and the three new Sections of the Association, viz: the Section on Pharmacopœias and Formularies and the House of Delegates, created at the

*For President's address and reports of officers and committees, see September JOURNAL, p. 1025 *et seq.*

Denver meeting last year, and the still newer Women's Section, each held two or more sessions in the performance of the duties assigned them. The hospitality for which the South has long been noted found renewed expression, not only in the warmth of welcome extended, but in the fact that all of the several delightful entertainment features tendered the visiting members and their ladies were entirely free of charge. There is reason to believe that the object had in view in going to the South for the 1913 meeting, the stimulation of interest in professional and scientific pharmacy, with a corresponding increase of membership from that section, will be happily fulfilled.

FIRST GENERAL SESSION.

The first general session was called to order, Monday, August 18, at 3:25 p m., by President William B. Day, of Chicago, in the auditorium of the Masonic Grand Lodge, on Capitol Boulevard. The President called upon the Rev. R. Lin Cave, of Nashville, to invoke the Divine blessing upon the deliberations of the convention.

His Excellency, Hon. Ben W. Hooper, Governor of the Commonwealth of Tennessee, was down on the program for the opening address of welcome, but was unable to be present, and his Secretary, Hon. Robert S. Henry, was invited by the President to address the Association in his stead.

Mr. Henry said that, in appearing before this, the Sixty-first Annual Convention of the American Pharmaceutical Association, he wanted to express Governor Hooper's great regret that he was unable to come in person and extend a welcome on behalf of the State of Tennessee to this body of men who had, for so many years, done their share to see to it that, when the doctor said his patient should take a certain thing, he got that thing, and not "something just as good." There could not be any doubt of the warmth of Tennessee's welcome, Mr. Henry said, particularly in August, and he felt sure that the pharmacists of Nashville had shown that they were proud to have this great National body meet in the State. For the State-at-large, he wished to add an emphatic, hearty, real welcome in words, to that already shown by their deeds, and to assure the members that this gathering here of a body of men who had done so much to elevate the purely professional and scientific side of pharmacy was highly appreciated. Mr. Henry professed that, although he had many personal friends who were pharmacists, he knew very little about pharmacy as such, and had done his best "to steer clear of the products of pharmacy, as he had a deep-seated antipathy to any personal application of the same." Referring to the modern evolution of the drug business, and the jocular claims of the press that drugs had been crowded to the rear of the store, and "soda-water and hair-pins" installed at the front, he was reminded that the foundation-stone of the drug business was, at last, the filling of prescriptions, and there was a real conviction among the public at large that the American Pharmaceutical Association as an organization was constantly working to the end that prescriptions should be carefully and skillfully compounded, laboratory experiments carefully conducted, and generally to aid in the mighty work going on for a better America. He concluded by saying that the citizens of Tennessee had been expecting the pharmacists of the country for a

long time, and now that they were here they were "willing to take their medicine," and were glad to have the opportunity to do so.

The President said he was sure the Association had listened with a great deal of pleasure to the welcoming address of Mr. Henry, and reciprocated the friendly sentiments expressed.

The President then called upon Hon. John Coode, Vice-President of the Nashville Board of Trade and member of the Industrial Bureau, to welcome the Association on behalf of the organization he represented.

Mr. Coode began by saying that the "Honorable" prefix to his name was a recent acquisition, and that he had lived a good while without it, but hoped to live up to it in the future. He was Vice-President of the Nashville Board of Trade and Member of the Industrial Bureau, which organization he represented in the absence of the president. He said that he was noted as a warm-weather debater; He said very little, and took very little time to say it. He expressed delight at having the Association meet in Nashville. His were commercial organizations, and were always looking for conventions of this character. Commercialism was what made a big city, and he believed this Association had its commercial side. August, of all the months, was the time to extend a warm welcome, and he expressed delight that the members had selected Nashville for their place of meeting, and hoped the convention would return at some time in the future. He also expressed the hope that the individual members would come back. He closed with the assurance that anything the organizations he represented could do to add to the pleasure or happiness of the members while in the city, they would be only too delighted to do.

The President next called upon Mr. R. W. Vickers, the accredited representative of the Tennessee Pharmaceutical Association, to address the members by way of welcome on behalf of that body.

Mr. Vickers was fully equal to the agreeable task assigned him. He began by saying that he was very much surprised to see so many present; that he had, at first, felt sure that this would be one of the most largely-attended meetings in the history of the Association, but when he had seen the picture of the Nashville Committee, which had been published in several of the journals, he began to fear that every one who saw that picture would "take the back track."

On behalf of the druggists of Tennessee he extended a hearty welcome to the State. A long address of welcome, it was generally agreed, was not the proper thing, and he would be brief—although brevity was one of the proper things he admitted he did not like, because a brief welcome might imply the desire for a brief visit. Mr. Vickers said he could consume the whole five days allowed for this meeting in telling of the attractions of Tennessee and the charms of her people, and even then the half would not be told. He assured his auditors that the druggists of Tennessee were highly appreciative of the honor conferred upon them by the coming to their State of such a distinguished body of their professional brethren. They fully realized that the American Pharmaceutical Association was the pioneer organization of their profession, and among its members were men whose abilities were known, not only in America, but throughout the world of pharmacy. Some they had met on previous occasions like this, but they were delighted to make new acquaintances. He wished, however, to express

the hope that their stay would be full of delight, as the pleasure of the local druggists would be as nothing without the pleasure of their guests.

Continuing, Mr. Vickers said that all were aware, of course, that Tennessee was the "one spot on earth where all mankind longs to come. It was here that the poet, the artist and the orator found material for their inspiration; and all the beautiful, real pictures we have, of majestic mountains, lovely rivers and beautiful vales have their origin in sunny Tennessee. Then, too, Tennessee's people can be found everywhere, and the pages of the country's history are adorned with their names. We have sent two Presidents to the White House, and more recently we have sent a representative to the Cabinet of the President of the United States, and a member to the Supreme Court, as well as having a large number of men in responsible positions in our National Government. In fact, in nearly every State in the Union can be found men from Tennessee, who rank among the foremost of the State of their adoption."

"But all the good men that Tennessee has produced have not left the State," said Mr. Vickers; "and some are right here in Nashville. This was evidenced recently, when the wholesale druggists of America needed a man for President. They came to Nashville for him, and in the person of Charles S. Martin they found one of the best presidents that organization had ever had. I would say the best, except that there is another ex-president in the room. Again, last year, when the doctors of the Union wanted the best man in the land for President, they naturally came to Nashville, and, in the person of Doctor J. A. Wither-
spoon, they also found the best president their association had ever had."

Continuing, Mr. Vickers said: "Now, my visiting friends, I don't care what these home-folks think about the brevity of my talk, I am not going to stop until I say a few words specially to these visiting ladies—for it is you ladies that we are really glad to see. You are more welcome than the flowers that bloom in May, and I am sure that you will enjoy this visit as one of the greatest of your lives."

Mr. Vickers went on to say that, but a short time ago, a New York newspaper had offered a handsome prize for the most beautiful woman in America, and that prize had been awarded to a Nashville lady. Nashville was also noted as the home of artists and writers of prose and poetry whose reputations were nation wide, and also as the home of other celebrities too numerous to mention. "But," said Mr. Vickers, "the most charming of the Nashville ladies are those who have your entertainment in charge, and whom you will meet during your stay here."

The President stated that such a splendid address on the part of Mr. Vickers naturally made the Association feel like "putting its best foot foremost" in response, and this response would be made by one of the greatest men in American Pharmacy, as well as one of the greatest speakers in the Association, Professor Joseph Price Remington, of Philadelphia.

Professor Remington said he was sure they had given the members, in this beautiful city of Nashville, a thoroughly warm and cordial reception—and he did not refer to the weather, but to the hospitality of this glorious Southern country. It was true that, during the great number of years in which the Association had flourished, it had not met as often in the South as some of them would have liked; but he wanted to say that the South would have flourished

in pharmaceutical matters as the North had done, but for the trouble of 1861-65. All that was past now, however, and the only sectional troubles existing in the country at this time were those in the State of New York. Otherwise, we were a united country, and Pharmacy knew no North, no South, no East, no West. They were all members of a peaceful profession, and those present here represented a great class in the country interested in the cure of the people, and helping them to bear the ills that all suffered from. Consequently, they had come down to the Southland, to this beautiful city, and had been welcomed with open arms. They realized that the public and the newspapers had heralded this meeting of the Association as one which would redound to the benefit of this section. And that was the object of the American Pharmaceutical Association, to meet in different States in the Union, thereby encouraging the local members and stimulating an interest in higher pharmacy. He refused to believe that anything more than a very small minority of the men and women engaged in the noble profession of pharmacy were pursuing it for the sake of mere gain. He could point to men in the audience before him who would have become eminently rich men, had they devoted their lives to that object, but who had stood steadily behind the counter and wielded the mortar and pestle, because of their love of humanity, and because of the honor they felt in doing this work of self-sacrifice for the good of humanity. In conclusion, Prof. Remington said that no words of his could adequately convey to the people of the State and to the good people of Nashville the thanks of this body for the hospitality which had been tendered by these Southern people who were noted for their hospitality, but with such power of expression as he had he thanked the people of Tennessee, in the name of the American Pharmaceutical Association, for the welcome they had received, and he was sure the members would depart feeling that it was good for them that they had been here.

At this point, the President took occasion to say that the Association, for several years past, had been looking forward to this meeting in Nashville, that Local Secretary J. O. Burge had spent a great deal of time and effort, not only in presenting the claims of Nashville as a meeting-point, but in preparation for this meeting after it was assured, and it was a matter of great regret that he had to announce the illness of Mr. Burge, and his inability to be present at this time. He said he was sure the Association sympathized with him in his illness, and that all hoped he would be able to be present at some later time during the meeting, that they might take him by the hand before the convention closed. Mr. Burge was one of the oldest and most faithful members of the Association, a man who had worked hard to lay a firm foundation for the prosperity that the Association now enjoyed, and had devoted a great deal of his time and effort in advancing the interests of American Pharmacy, and the interests of the American Pharmaceutical Association. In conclusion, the President stated that Mr. Burge had been most fortunate in having for a substitute Doctor E. A. Ruddiman, of Vanderbilt University, another active member of the Association, and that Doctor Ruddiman had already demonstrated his ability and efficiency. Doctor Ruddiman, he said, now desired to make a few announcements for the Local Committee and the Committee on Entertainment.

Doctor Ruddiman stated that, on behalf of the Local Committee, he wished to express their pleasure at the opportunity afforded of grasping the hands of their visitors and welcoming them to Nashville. The Committee was laboring under some disadvantage in the loss of Mr. Burge's services, as he had planned everything, and all that was good was due to his efforts, while that which was bad could be charged to the speaker. He requested that when any of the members wanted anything they would make their wants known to some one of the members of the Local Committee, who wore badges for identification.

Doctor Ruddiman went on to say that the entertainment features were entirely free, and they were glad to give what little they had. Nashville was not a sight-seeing city, like Denver, with its vast plains and lofty mountains, and Boston, with its history; but they gave freely what they had. He then proceeded to make a series of announcements, namely, as to the President's reception in the evening at 9 o'clock, following a session of the House of Delegates; a sight-seeing entertainment for the ladies at 10 o'clock Tuesday morning; a meeting of the National Association of Boards of Pharmacy at 10 o'clock Tuesday morning; and a session of the Commercial Section at 2:30 p. m., Tuesday.

The President then called upon Professor C. F. Nixon, of Leominster, Mass., to address the Association on behalf of the National Association of Retail Druggists.

Prof. Nixon said that, by reason of the absence of Mr. Freericks, Chairman of the Delegation, it devolved upon him to bring the greetings of the National Association of Retail Druggists to this Association. The functions of the two National organizations were quite different. Roughly speaking, this Association represented the scientific side of pharmacy, while the N. A. R. D. represented the commercial side. However, these functions were closely intermingled, and at many points they seemed to overlap. He had heard it said that, because of this fact, they should be united in one grand organization. In his opinion, however, these organizations should not unite. The work was so heavy upon each body now that it would be practically impossible for one convention to cover the work of both in the time allotted. He believed the pharmacists of the United States should be united in some form of national organization, but he believed that a greater membership was assured by the two organizations, as what would appeal to one would not appeal to the other. Another reason was, that the time had come when it was necessary for pharmacists to look after National legislation. Until ten years ago, there was no occasion for anything of this character; but since the passage of the Pure Food and Drugs Act, and the agitation for a National Anti-Narcotic Law, and various other forms of legislation, it had become necessary to look after the Washington end of legislation. It had been said in this connection that, because the doctors were united as to Congressional action, the pharmacists of the country should be likewise united. He believed, however, that greater results could be accomplished by the two organizations, working as two separate units, rather than as one. In conclusion, Mr. Nixon said he brought the greeting of the National Association of Retail Druggists, with the hope that this meeting would be the most successful in the history of the Association. He called attention to the convention of the N. A. R. D. at Cincinnati next week, and extended to the members present a hearty invitation to attend.

The President said it had been a great pleasure to listen to the words of greeting from Professor Nixon on behalf of this sister organization, the National Association of Retail Druggists; and, feeling as he did, he thought there was ample room for both these pharmaceutical associations, for the great field of pharmacy was as yet but slightly touched by organization work. There was not a particle of jealousy in this organization over the growth and spreading-out of this sister organization, which had the well-wishes and hearty cooperation and support of this Association, and had likewise the assistance of many of the most active members of this body. And not only so, but practically all their officers and their most active members were represented in this Association. There was a true fraternal spirit existing between the two organizations.

The President stated that as the members of this Association were closely related to their fellow druggists on the one hand, so they were related to the physicians on the other, and he would now call on the representative of the American Medical Association to address the convention in behalf of that organization. He explained that the specially accredited representative of the A. M. A., Doctor G. C. Savage, of Nashville, was unable to be present, but the Association had a representative present in the person of Doctor Bernard Fantus, of Chicago.

Doctor Fantus began by saying that some had honors thrust upon them,—which had happened to him,—and some were unworthy of the honors thrust upon them—which was the way he felt just now, for he surely did not feel as though he really represented the American Medical Association on this occasion. Referring to the President's statement about the brotherhood of the professions, he said he thought medicine and pharmacy might, in one sense, be called twin professions—because between the dispensing doctor and the prescribing druggist there was not very much difference; they were very much like twins. He thought that "brother professions" would be much better, if each would take care of its own professional field. Then, too, as often happened between brothers, there were "fights" between the doctors and the druggists, individually and collectively; but possibly these fights would end for the best, by strengthening both. The Doctor then went on to say that, while he was at present practicing medicine, he had always taken a deep interest in everything that pertained to pharmacy, as that was his "first love"; and he believed it would be well if pharmacists in general would take a deeper interest in matters pertaining to medicine. The more the doctors knew of pharmacy, and the more pharmacists knew of medicine, the better it would be for both. He was not afraid that pharmacists would get to know too much about medicine. As a matter of fact, he believed it was the lack of knowledge of medicine that sometimes made the practice of pharmacy dangerous. He knew whereof he spoke, because he was once upon a time a youngster behind the prescription-counter himself, and had prescribed across the counter, and felt very "smart" for doing so; but if he had known then what he knew now, he would not have done it. The medical profession was, therefore, deeply interested in the pharmaceutical profession, and particularly in the education of reliable pharmacists, and was watching with great interest to see what would be done by this Association towards raising the educational standards of pharmacists throughout the country.

Continuing, Doctor Fantus said it was hardly necessary to assure the members

that the American Medical Association was a true friend of the American Pharmaceutical Association. From the proceedings of the American Medical Association as published in the JOURNAL, it would be seen that the medical profession was constantly aiming for the best interests of the pharmaceutical profession. This was shown in the establishment of a Council of Pharmacy and Chemistry, which has been maintained at great expense by the American Medical Association, and which meant nothing more nor less than that the doctors could not get along without the counsel of pharmacists. Individual doctors might not see it this way, and it might be that they had asked for counsel sometimes and not gotten it. The manufacturer's detail man was sometimes more ready to give aid to the doctor than the neighboring druggist, and this fact might explain why the doctor was sometimes more ready to listen to him. He hoped the time would come when the neighboring druggist would be both able and willing to give the doctor counsel in regard to pharmaceutical matters—when the pharmacists would become medical specialists, taking care of the dispensing of efficient medicines—the right arm of the healing art.

The President said he knew that all must deeply appreciate the remarks of Doctor Fantus. He had been called upon unexpectedly, and had spoken directly from the heart. He was an active member of the Chicago Branch, and had at all times tried to do everything in his power for the cause of true pharmacy. Pharmacists generally thought well of the great medical association which he represented. In fact, the American Medical Association, as all knew, was doing a wonderful amount of good; it was working in the public interest, and not purely for the medical profession. The American Medical Association, he said, was the pharmacists' ideal of a successful working organization, and they were trying to pattern after them in a number of ways.

The President stated that the National Wholesale Druggists' Association had a representative present, in the person of Mr. Charles S. Martin, a prominent wholesale pharmacist of the city of Nashville, a well-known and highly-honored citizen of the community. He invited the gentleman to address the Association.

Mr. Martin said he esteemed it a very great pleasure and privilege to extend to this body the cordial greetings of the National Wholesale Druggists' Association, and to express the hope that this meeting in Nashville would be both pleasant and profitable. The National Wholesale Association, he said, was one of the oldest organizations in the drug trade. For nearly forty years, it had stood for whatever was fair, whatever was honest and whatever was true in the business of pharmacy; that it stood back of the pharmaceutical profession in all matters, social, commercial and scientific. It prized none of its connections more than with the American Pharmaceutical Association, delegates from which did them the honor to meet with them, and always received a cordial welcome at their annual conventions. On this occasion, Mr. Martin said, he had the pleasure of occupying a dual role, being first the guest of this Association, and then its host; and he wanted to take this opportunity of also adding his word of welcome to that already accorded on behalf of the city of Nashville, the Capital of the State and home of many of her illustrious scholars and statesmen, and made famous by her many institutions of learning. It was not at all necessary, Mr. Martin said, that the Association should have come to Nashville in August, in order to

receive a warm welcome. The city was not at its best, for a large part of the population was camping on the beautiful hills around Nashville, or else visiting their "country cousins." He assured the Association that, at any time it chose to return, the members would receive a hearty and cordial welcome. He expressed the hope that the deliberations of the body would be full of good and accomplishment, and redound to the glory of the country and the good of mankind. He concluded by saying that anything the committees could do to enhance the pleasure of their guests, he was sure would be gladly done.

The President thanked the speaker for his kind words, and said that all pharmacists knew of the intimate, cordial and friendly relations existing between the retailers and wholesalers of the country, and it was a matter of pride that so many members of the National Wholesalers' Association were active members of this Association, and took such a deep interest in its work.

The President stated that the National Association of Manufacturers of Medicinal Products was one of the newer organizations affiliated with this body, —or, perhaps he should say, cooperating, instead of affiliated, for the manufacturers' organization had cooperated with this organization on several occasions, and notably that of the recent National Drug Trade Conference. He indicated the presence of Mr. Charles M. Woodruff, of Detroit, combining in himself the offices of Secretary and Counsel for the Manufacturers' Association, and invited him to address the Association on behalf of that body.

Mr. Woodruff said he appreciated the privilege of appearing before this Association for three reasons: First, because he had been honored with the position of Secretary and Counsel of the National Association of Manufacturers of Medicinal Products, an organization which had made possible what the American Pharmaceutical Association had started at Denver a year ago, namely, viz: the National Drug Trade Conference. Secondly, the weather was too hot to memorize a speech; and, thirdly, he didn't know when to stop when he undertook to make a speech he had not written, so he had fortified himself against this bad habit by writing out what he had to say—and, since the Mulhall Investigation, he had come to the conclusion that it was a good practice, anyhow, for a man to keep a copy of whatever he had to say.

Mr. Woodruff then proceeded to deliver the written remarks he had prepared, beginning by congratulating the Association upon this its sixty-first anniversary, and stating that he was a subject for congratulation in turn, as this was his sixty-second birthday. At some length he went into his recollections of his childhood and boyhood days, when he had run practically the whole gamut of the diseases incident to that time of life, and told of how he had really enjoyed being ill, —since the household was under homeopathic *regime*. Mr. Woodruff then went on to gild these halcyon days of boyhood by tender memories of tarts and pies that were his during happy days of convalescence, and said that there must have been some merit in this system of raising a boy, because since he had reached manhood's estate, he had only been ill six days in forty years.

Turning from lighter to more serious mood, Mr. Woodruff continued:

"In conclusion then, let me ask by way of giving you something to carry away and think about, do you know that the National Association of Manufacturers of Medicinal Products is the child of the American Pharmaceutical Association?"

I wish you could have heard the fatherly words of your representative at our last gathering—Mr. Thomas F. Main. May I repeat them? for they are worthy a larger audience than they had when they were first uttered.

"Recounting the history of the American Pharmaceutical Association, Mr. Main alluded to the fact that one of the original purposes of your Association was to improve the science and art of pharmacy "by encouraging home production and manufacture in the several departments of the drug business." Mr. Main then went on to say very truthfully:

"That home production and manufacture have been encouraged in the sixty-one years that have elapsed since the American Pharmaceutical Association was founded, the formation of your own Association is an eloquent witness, and at this time it is safe to say that our makers of medicinal chemicals turn out goods equal to the world's best products and that in the manufacture of elegant and standardized pharmaceuticals our laboratories practically lead the world." * * *

"In the evolution of the manufacturing industries in the United States, it was inevitable that the economy and ready standardization secured by manufacturing drug products on a large scale, would relegate to the splendidly equipped and manned laboratories of the present day the manufacture of concentrated medicines of large use, as well as those demanding a high degree of technical skill or special apparatus to manufacture; and it was also inevitable that in the products of a manufacture which have so much to do with the prevention and cure of disease, the mitigation of suffering and the preservation of human life, the highest standards must be maintained, and that no mistaken notions of a manufacturer, rivalries between manufactures, no distrust or jealousies, no customs not in accord with sound business principles could be allowed to interfere with the highest standards of excellence in all drug products.

"And so, gentlemen, I believe that your Association came by evolution in due process of time. Many of your members are members of my own association; they know that in union there is strength, and it is eminently fitting that your Association and ours should stand together in work for the promotion of the best interests of pharmacy and medicine, and in creating and maintaining a standard of professional honesty equal to the amount of our professional knowledge, with a view to the highest good and greatest protection to the great American people, of which we are a part and which it is our privilege and our duty alike to serve."

The President said the Association appreciated these words of greeting coming from the National Association of Manufacturers of Medicinal Products' constituted representative, and thanked that association for its helpful cooperation. He said this Association hoped that the Manufacturers' Association would continue to take an interest in and have its representative at future meetings of this body, to participate in its deliberations.

The President stated that the National Association of Boards of Pharmacy was represented here in the person of its President, "our worthy member, Doctor William Mittlebach, who needs no introduction from me."

Mr. Mittlebach said he represented the National Association of Boards of Pharmacy, an affiliated organization, and that it was his pleasure to bring its greetings to this body. It was growing rapidly, and was doing some good work. It was organized as a kind of "police department" of pharmacy in general. "Your grand old Association," he said, "takes young men and young women and makes pharmacists out of them, and our branch of work was organized to see that these young pharmacists remain good and stay in line." He announced a meeting of his association for Tuesday morning at 10 o'clock, and said that it was a very

active body, with lots of work in hand, and thanked the Association for the courtesy extended him.

The President said that the members were fully aware that the National Association of Boards of Pharmacy really set the pace; that while the A. Ph. A. was working for the uplift of American pharmacy, the regulations established by the boards of pharmacy really marked the progress made month by month and year by year. He said he was sure the members of this Association were glad to see the boards of the country coming together, until now the National Association of Boards included practically all the boards in the country.

The President stated that the Public Health Service of the national government was represented in the person of Martin I. Wilbert, of Washington, who would now address the Association.

Mr. Wilbert began by saying that, coming as he did, from the "great national summer resort of the country," he found it rather warm down here for speech-making. He brought the greetings of the Surgeon General of the Public Health Service, and assured the Association of the cooperation of that department in any and all of its efforts for the public health and welfare. The various branches of the service were interested in matters relating to public health, but it would take more time than could be allowed to tell of the different ways in which its energies were being exerted. The Public Health Service had undertaken to compile the laws referring to the public health, and one of the bulletins referred to laws relating to poisons and habit-forming drugs, and he advised the members to get this. He emphasized the value of the institution of the National Drug Trade Conference, and said if the druggists ever expected to bring order out of chaos the only way was by cooperation and mutual assistance, through some organization like the Conference. Unless the state laws could be correlated, the existing conditions would be continued; and in his opinion non-enforcement of law brought disregard of the law, and was not good for American citizenship or the best interests of the public health or the public welfare. Mr. Wilbert closed by saying that the Surgeon-General of the Service wished him to assure the American Pharmaceutical Association that anything he could do to cooperate in any of their work related to the public health, he would be glad to do.

The President said that every member of the American Pharmaceutical Association knew of and appreciated the work that the Public Health Service was doing. Every member, he was sure, had received and read with interest the various bulletins concerning drugs, published by the Service, and that Mr. Wilbert was to be thanked for a very large proportion of the good work the Service was doing. So they were glad to have these words of greeting and offers of cooperation from the Surgeon-General.

The President said it was reserved to the last to hear from the youngest brother organization of the Association, the National Association of Drug Clerks, who had a representative on the floor in the person of Doctor George F. Payne, of Atlanta.

Doctor Payne said he came to this convention as a delegate from the National Association of Drug Clerks, having been elected an honorary member of that body when it was first organized. Only a few days before he had received notice that he had been selected as its delegate here, to extend to this organization their

greetings and good-will. There were many things that this young organization had undertaken, and it seemed to be going ahead with a great deal of energy and success. He would not try to explain all they were attempting to do, as it had been published in the pharmaceutical press, but he wished to bring before the Association one matter which he was specially charged to try to impress upon the minds of the members, and that was that the American Pharmaceutical Association should use its strongest efforts to advance the prerequisite requirement for graduation, before a candidate should be allowed to come up for examination. This was not the time or place for discussion, but he was charged to bring this message.

The President expressed the hope that this young organization might continue to flourish and prosper, and he represented at future meetings of this Association and take part in its work.

Acting-Secretary Ruddiman was here given an opportunity to make a number of announcements as to section and committee meetings, and conveyed an invitation from the Young Men's Christian Association of the city to the visiting members to use its swimming pool during their stay.

The time had now come for the President to deliver his annual address, and he asked Second Vice-President Caswell A. Mayo, of New York, to take the chair while that was being done. (See September JOURNAL, p. 1025.)

Great applause followed the reading of the address of the President.

The Vice-President asked what disposition should be made of the address just concluded, and on motion of Theodore J. Bradley, of Boston, seconded by George F. Payne, of Atlanta, the address was received and referred to a committee of five, to be appointed by the Chair, to consider and report at a later session.

The Chair appointed as said Committee on President's Address, Messrs. T. J. Bradley, of Boston; E. Fullerton Cook, of Philadelphia; F. W. Nitardy, of Denver; Charles S. Merrell, of Cincinnati, and W. R. White, of Nashville.

President Day resumed the chair, and called for the reading of the minutes of the Council as the next order of business, and Secretary Joseph W. England, of that body, read in abstract the minutes of the third session of the Council, held at Nashville at 10 a. m., this date (August 18, 1913). (See "Proceedings of the Council," in this issue.)

The President called for action on the minutes of the Council as read, and explained that, according to the By-Laws of the Association, that portion of the minutes involving an alteration or amendment of the By-Laws must be submitted in writing at this general session, and might be balloted on at any subsequent session. He thought it was sufficient for this purpose that the Secretary of the Council had given an abstract of these.

Thereupon, on motion of General Secretary Beal, seconded by Thos. F. Main, of New York, the synopsis of the minutes of the Council as read by the Secretary was received, and the amendments proposed were deferred for action until the next general session.

The General Secretary called attention to the requirements of the By-Laws that, at the first general session, the list of the various standing and special committees should be called, that their reports might be received and read by title, and referred to a subsequent session. In view of the lateness of the hour and

the fact that there was to be a session of the Nominating Committee immediately following this session, he moved that this part of the program be consolidated with the same item on the program for tomorrow morning's session, and that these reports be received and considered at the same time. This motion was seconded by H. M. Whelpley, of St. Louis, and carried.

The formation of a Nominating Committee was now in order, and the General Secretary, after explaining that each grand division was entitled to two members on the committee, called the roll of the various states, territories, island possessions and foreign countries entitled to representation thereon. He said that to facilitate the matter printed forms would be distributed to the various delegations present, upon which they might write the names of those they selected for membership upon the Nominating Committee. On his motion, a recess of ten minutes was then declared to give the delegations an opportunity to make their selections.

Upon resumption, the Nominating Committee was found to be made up as follows:

NOMINATING COMMITTEE.

Alabama—Lawrence C. Lewis.

Colorado—F. W. Nitardy.

Connecticut—Thos. F. Main.

District of Columbia—L. F. Kehler, W. S. Richardson.

Florida—E. Berger.

Georgia—Dr. George F. Payne.

Illinois—John C. Wheatcroft, I. A. Becker.

Indiana—W. H. Fogas, W. H. Rudder.

Iowa—J. M. Lindly, Zada M. Cooper.

Kansas—L. D. Havenhill.

Kentucky—L. A. Brown, J. W. Gayle.

Maryland—Henry P. Hynson, J. F. Hancock.

Massachusetts—Theodore J. Bradley, John G. Godding.

Michigan—Wilbur L. Scoville, Leonard A. Seltzer.

Mississippi—H. M. Faser.

Missouri—Wm. Mittlebach, Otto F. Claus.

New Jersey—Chas. Holzhauer, G. M. Beringer.

New York—C. A. Mayo, Hugh Craig.

North Carolina—C. P. Greyer, E. V. Zoeller.

Ohio—C. T. P. Fennel, J. F. Woolsey.

Pennsylvania—J. C. Wallace, E. Fullerton Cook.

South Dakota—H. A. Sasse, L. E. Highley.

Tennessee—J. B. Sand, M. E. Hutton.

Texas—R. H. Walker, R. H. Needham.

Members at Large—J. P. Remington, H. M. Whelpley, E. G. Eberle, M. I. Wilbert, J. M. Good.

The President announced that there would be a session of the Nominating Committee immediately following this session.

There being no further business before the Association at this time, on motion of Prof. W. C. Anderson, of Brooklyn, duly seconded, the convention stood adjourned until Tuesday morning at 10 o'clock.

SECOND GENERAL SESSION.

President Day called the convention to order, Tuesday, August 19, at 11:30 a. m., in Room A of the Masonic Grand Lodge, and called for the reading of the minutes of the first general session, as the first order of business.

The General Secretary read the minutes of the first session, and the same were, on motion of Otto F. Claus, of St. Louis, seconded by W. C. Anderson, of Brooklyn, approved as read.

The privilege of the floor was here given David J. Kuhn, of Nashville, who, as a member of the local lodge of Elks, said he had been commissioned to extend the privileges of the Elks Club to the members of the American Pharmaceutical Association while in the city.

On motion of Frederick T. Gordon, of Philadelphia, duly seconded, the thanks of the Association were extended to the Elks Lodge for this courteous invitation.

The President announced that the opening session of the new Women's Section would be held in the afternoon, and urged the members to encourage the ladies in getting a good start.

Doctor Ruddiman, acting Local Secretary, made an announcement regarding the proposed Mammoth Cave trip for Saturday, and likewise that proposed for Lookout Mountain and Chickamauga Park the latter part of the week; also a theatre-party for the ladies Tuesday evening.

The President stated that Mr. Lascoff, Chairman of the Section on Practical Pharmacy and Dispensing, had lauded him the program of the Section meeting for Wednesday afternoon at 2:30 o'clock, and asked him to call attention to it. This Section the Association was sometimes accused of neglecting, and he wished to disprove this charge at this time. The Section had a splendid program, of some thirty-one good, practical papers, and members were urged to be present and take part in its proceedings.

The General Secretary read a communication, which had come to his hands from the Austrian Pharmaceutical Association, inviting this Association to send representatives to the Third Austrian Pharmaceutical Exhibition.

The General Secretary also read letters and telegrams as follows:

Greetings from the Women's Organization of the National Association of Retail Druggists. A communication from the Wm. S. Merrell Chemical Company, extending an invitation to a barbecue to be given at "Coney Island," near Cincinnati, on Friday, August 29, in honor of the National Association of Retail Druggists meeting in that city. A communication from the Chicago Drug Club, extending best wishes for a successful convention, and inviting the Association to meet in Chicago in 1914. Telegrams of regret at their inability to attend this meeting from Messrs. F. C. Godbold, of New Orleans; F. W. Meissner, of La-Porte, Ind.; F. M. Apple, of Philadelphia, and Mrs. Fletcher Howard, of Los Angeles, Cal. Invitation from the mayor and board of trade of Niagara Falls, N. Y., for the 1914 meeting, and communication from the California Pharmaceutical Association, extending a like invitation to meet in San Francisco in 1915.

C. A. Mayo, of New York, seconded by Otto F. Claus, of St. Louis, moved that the Secretary be instructed to make suitable acknowledgement of the communications and telegrams received, and that the invitations for the 1914 and 1915 meetings be referred to the Committee on Time and Place.

Thos. F. Main, of New York, commenting on the invitation from Austria, suggested that as Professor Joseph P. Remington was sailing for Europe next week, to represent American pharmacy at the Eleventh International Pharmaceutical Congress at The Hague, it would be eminently appropriate, if it were possible for him to do so, to have him proceed thence to Vienna, as the representative of this Association at the exhibition to be held there.

The President said this suggestion would be included in the motion just made. Thereupon, Mr. Mayo's motion was put to a vote and carried.

The Secretary read a telegram just received, announcing the death of I. A. Keith, of Dell Rapids, S. D., a long standing and honored member of this Association. As a mark of respect to the memory of Mr. Keith, he moved that the members arise and remain standing for a few moments, and this was done.

H. M. Whelpley, of St. Louis, paying tribute to the character and worth of Mr. Keith, said that, while he was not able to be present at many of the annual meetings of the American Pharmaceutical Association, he was a man who exerted great influence for the good of pharmacy, not only in his own section of the country, but throughout the United States. He had added many new members to the Association, and had had much to do with the formation of the excellent pharmacy law and the good condition of pharmacy in South Dakota.

H. A. Sasse, of Henry, S. D., supplementing the remarks just made concerning Mr. Keith, said that in the early days, before South Dakota had passed from a territory into statehood, Mr. Keith became the President of the association there, and acted in that capacity for quite a number of years. He was then made Secretary, and continued in that capacity for a still greater number of years. He has been active in the State Association doings for a quarter of a century. Mr. Keith, he said, had also been President of the National Association of Boards of Pharmacy. Recently, at the meeting of the State Association at Sioux Falls, they had learned of Mr. Keith's ill health, and now that he had passed to the Great Beyond he could say that South Dakota had lost "a grand old man."

Prof. W. C. Anderson was accorded the privilege of the floor to make announcement of the initial meeting of the new House of Delegates this evening at 7:30 o'clock. To dispel any doubts as to who were entitled to seats in the House, Mr. Anderson said that all delegates from state and local associations and other associations which were in the habit of sending delegates to the American Pharmaceutical Association were eligible to seats in the House of Delegates, each such organization being entitled to three delegates. The credentials of these delegates must, however, be passed on and approved by the Council, and he asked that those holding credentials turn them in at once. The business for tonight's session would be the organization of the House, seating of delegates, election of officers for the ensuing year, etc. Mr. Anderson pointed out that the chief office of the House of Delegates was to save the time of the Association in general session, by discussing and whipping into shape the various resolutions offered from time to time affecting the policy of the Association. Any member of the Association, whether a delegate or not, was entitled to the privileges of the floor of the House of Delegates, but was not entitled to a vote unless he was a delegate.

A. V. Pease, of Fairbury, Neb., Chairman of the Commercial Section, was given opportunity to announce the program of the Section meeting Tuesday afternoon.

The report of the Nominating Committee was called for, and was presented by Dr. John C. Wallace, of New Castle, Pa., Chairman of the committee. (See September JOURNAL, p. 1071.)

The President stated that the report of the Nominating Committee was subject to amendment on the floor of the convention, or for approval of the entire list of names submitted.

Thereupon J. H. Beal, seconded by W. C. Anderson, moved that the report be received and agreed to.

Prof. Charles Caspari, Jr., of Baltimore, while expressing his deep sense of appreciation of the great honor conferred by the committee in naming him as one of the candidates for President, asked for personal reasons the privilege of withdrawing his name from nomination. This request immediately resulted in a storm of protest from Professor Caspari's many friends and admirers, and Doctor John Uri Lloyd, of Cincinnati, was especially earnest in his insistence that Professor Caspari should remain a candidate. He said that Professor Caspari was usually right, but occasionally wrong, and this was one of the times when he was wrong. He made a personal appeal to him to permit his name to stand. Mr. Mayo, of New York, himself one of the nominees for President, also generously urged the candidacy of Professor Caspari, and said that both he and Mr. Raubenheimer, of Brooklyn, the third nominee for President, would esteem it an honor to be on the ticket with Professor Caspari. He wittily remarked that, when his own name had been proposed for the presidency, he was delighted, naturally, as he had hopes of success; but when Professor Caspari's name was put in nomination, he thought, "Oh, shucks!"—and he still felt that way. Finally, however, after Professor Caspari had explained that, despite the fact that he had been deeply moved by the exhibition of confidence here shown—a testimonial such as he had never in his life before received—imperative private reasons constrained him to this course, he was permitted to withdraw his name; and, on motion of J. H. Beal, seconded by Dr. John C. Wallace, of Pennsylvania, the name of William C. Anderson, of Brooklyn, was substituted. Professor Anderson tried to protest, on the score that "there were too many men from New York on the ticket," but his protest was of no avail.

Thereupon, upon motion of Dr. H. M. Whelpley, seconded by Thos. F. Main, the report of the Nominating Committee, with the name of W. C. Anderson substituted for that of Chas. Caspari, Jr., was duly adopted.

Reading of the minutes of the Council was called for as the next order of business, and Secretary England, of that body, read the minutes of the fourth session, held this day, beginning at 10 o'clock a. m. (See "Proceedings of the Council" in this issue.)

The President called for action upon the minutes of the Council as read.

Prof. W. C. Anderson asked if the adoption of the minutes by the Association meant the approval of the appointment of the Commission on Proprietary Remedies referred to in the minutes, and the President answered that it did. Prof. Anderson, seconded by Dr. Claus, thereupon moved that this proposition be referred to the House of Delegates, so that it might be thoroughly discussed.

J. H. Beal expressed the opinion that this motion was not in order, as this was not a resolution, but a proposition to create a committee to perform a certain work,

and there was no reason that he could see why the House of Delegates should be called upon to pass on that subject.

Prof. Anderson said he did not believe the membership in general understood what this meant, and the members should not be expected to vote upon a proposition they did not understand. He for one did not understand whether by approving these minutes there was to be established in the American Pharmaceutical Association a commission that would examine into the remedies on the market and report on them or not.

The President thereupon called upon Mr. Beal to make a general statement as to the scope of the proposed commission.

Mr. Beal said the adoption of the report made by the Council would have the effect of creating this committee—which, for the sake of distinction was designated by the name of a “commission.” This commission was to consist of five members, elected by the Council. At first, the members were to be elected for one, two, three, four and five years, respectively, and the vacancy occurring each year would be filled by the election of a member for a five-year term. This commission would be limited in the scope of its activities, and would discharge certain functions, which he would enumerate directly. The reports were to be in the nature of reports of progress, made annually to the Council. It was expressly provided that no report, or resolution, or conclusion, of the commission was to be regarded as representing the sentiments of this Association, or of the Council, until the Association or the Council should have formally expressed their approval. The functions proposed were as follows—the first being a very general proposition:

- “1. To inquire into and report to the Council from time to time upon the general subject of proprietary medicines, in their relations to pharmacy, medicine and the public health.

2. To inquire whether any of the proprietary medicines, commonly known as patent medicines, contained alcohol or narcotic drugs in sufficient amount to render them liable to create a drug habit, or to satisfy such habits where otherwise created.

3. To inquire whether, or to what extent, the commonly advertised patent medicines contain potent drugs in sufficient amount to render them dangerous in the hands of the laity.

4. To inquire into the extent to which patent medicines are fraudulently advertised, or differ in properties or origin from the claims made for them, and the extent to which they are advertised for the cure of diseases generally recognized by the medical science as at present being incurable.”

Continuing, Mr. Beal said it was a question, now, of whether or not the Council was capable of making a selection—and its selection would be subject to the approval of the Association—of men of the ability, courage and discretion necessary to properly administer the functions which were proposed to be placed in the hands of the commission. This was a question that could no longer be dodged, he said. “The time is coming rapidly—and in my estimation, the time is here—when we should first of all know where we stand on this subject of proprietary medicines,” said Mr. Beal, “and when we know where we stand, that we be prepared to express our position in temperate, moderate, well-considered language.” As had been stated in the argument before the Council, the subject of proprietary medicines—patent medicines in particular—had been discussed heretofore by two

classes of periodicals, the so-called "yellow press," which presented the subject in a highly sensational manner, and the extreme, radical press on the other hand, which tried to present patent medicines in the worst possible light. It was proposed now to establish a committee or commission, or council—whatever it might be called—which should get at the facts, and nothing but the facts, as nearly as they could be gotten at with absolute truth; and that the Association should not flinch from having the facts properly collected, accurately collated, and carefully and temperately considered. In conclusion, Mr. Beal said he believed this to be a step in the right direction, and that if this Association did not undertake this work, somebody else would. "Have we," said Mr. Beal, "the courage to take the step, the ability to select the proper men, and the judgment and discretion and knowledge to pass wisely upon the reports to be made by the proposed commission? I say we have, and I trust that this report will be adopted."

Dr. H. P. Hynson, of Baltimore, thereupon moved that the minutes of the Council be received and approved as read, said motion to include approval of the action of the Council in providing for the establishment of this commission. This motion was seconded by Prof. Philip Asher, of New Orleans, and others.

Prof. W. C. Anderson said he had no hesitation in withdrawing his motion to refer this proposition to the House of Delegates, in view of the explanation just made by Mr. Beal, which was so clear that all could thoroughly understand it. As Mr. Beal had explained the matter, he thought the creation of a commission of this kind would be a splendid thing, and he was glad to second the motion to approve the action of the Council in this behalf. The American Pharmaceutical Association, he said, was pre-eminently the body to undertake this work, in order to prevent misrepresentation of the patent medicine business, and the manner in which the retail drug trade was involved in it.

The President said he felt sure that the members would be of one mind about this matter after they all clearly understood it.

Dr. Hynson said that while he heartily favored the creation of this commission, he thought the proposition should have full discussion, for if there was any measure whatever that was a proper subject for discussion by an assemblage of this sort, it certainly was a proposition like this. Therefore, he hoped the members would freely express themselves.

The President said he felt so sure that all must agree, after Doctor Beal's presentation of this subject, that discussion was hardly necessary, but he would be glad to hear from any member who might wish to speak on the subject.

There were calls of "Question", and the motion was put on the adoption of the minutes of the Council as read, and it was carried unanimously.

The President stated that the next order of business was reports from the officers of the Association, and he called for the Treasurer's report.

Treasurer Henry M. Whelpley, of St. Louis, said that, before submitting his report, he wished to announce that the gold badges and bars could be had by any of the members that desired them. He then went on to explain that the change in the fiscal year had made the Treasurer's report rather out of date at the annual meeting, as his report was closed with the calendar year 1912, on December 31, and therefore did not embrace the nearly eight months that had elapsed of the present year. For this reason he thought it might be well to submit to the

Association a synopsis of the financial affairs as they stood on August 15, 1913, which would give the members much more recent and up-to-date information than that contained in his official report, which would appear in the Proceedings.

The Treasurer then went on to say that the Association had a number of special funds—funds that had been established from time to time for special purposes, and were maintained either by the addition of accrued interest, or by the addition of interest, plus certain contributions. There was a Life Membership Fund, constituted of moneys received from those becoming life members of the Association, which fund was also increased by the annual interest thereon. On August 15, 1913, this fund amounted in round figures to \$19,500. The Endowment Fund, established by Mr. Sheppard, of Boston, Mass., and Mr. Beal, of Ohio, and contributions from members, had reached at the present time the sum of \$5300. Neither the principal of this fund nor any income therefrom could be touched until it reached the sum of \$25,000. The Ebert Legacy Fund now amounted to \$3100, he said, and the Centennial Fund—which was established by the balance left in the hands of the Entertainment Committee at the meeting in Philadelphia in 1876—had, by the compounding of interest semi-annually, grown from the small amount of a few hundred dollars to one of \$2700. The Ebert Prize Fund, which was originally \$500—given by President Ebert when he was elected to that office—and which paid an annual prize, had grown from \$500 to over \$1000 at the present time. These funds totaled the sum of something over \$32,000, and were known as the permanent funds of the Association. They were increasing at the rate of \$1500 a year from interest. The Association also, Mr. Whelpley said, handled certain trust funds—funds which did not belong to the Association, but were held in trust by the Association. As an example of this he cited the Procter Memorial Fund, which, in round numbers, had now reached the sum of \$6000. Also the College Prize Fund, of \$33; and a fund lately received from the Board of Trustees of the United States Pharmacopoeial Convention, known as the Rice Memorial Fund, arising from money left in the hands of the Board of Trustees after the Rice memorial was issued. Summing up, the Treasurer said that the Association, on August 15, 1913, was responsible for \$56,838.58.

Treasurer Whelpley thereupon proceeded to present his written report, with copious explanatory remarks. (See September JOURNAL, pp. 1049 and 1051.)

On motion of W. S. Richardson, of Washington, seconded by Prof. J. U. Lloyd, of Cincinnati, the Treasurer's report was ordered received and referred for publication.

General Secretary Beal presented his report in brief abstract (See September JOURNAL, p. 1043), and explained that, as required by the provisions of the By-Laws, most of the financial affairs of the Association were in the hands of the Treasurer, who collected and receipted for dues, etc., and the financial accounts in the hands of the Secretary were confined to receipts from sales of the National Formulary, proceeds of subscriptions for the JOURNAL, and advertisements therein and a few small collections. Those who had noticed the very admirable manner in which the Treasurer had performed his work would not care to make any change.

The President said he was sure that all had greatly enjoyed this splendid

report of the General Secretary, and called for action thereon. He suggested referring it to the Council with the recommendations therein contained.

Frank H. Freericks, of Cincinnati, so moved, and the motion was seconded and carried.

The President said the General Secretary would now present in abridged form the report of the various standing committees.

The General Secretary said he had in his hands the report of the Committee on Drug Market, which it was customary to read by title and refer to the Scientific Section, and he so moved. This motion was seconded by Mr. Mayo, of New York, and carried.

The General Secretary also stated that he had in his hands the report of the Committee on Weights and Measures, and suggested that this be also received, read by title, and referred to the Scientific Section. The President said it would be so ordered, without objection.

The General Secretary presented in abstract the report of the Board of Canvassers for the Election of Officers for 1913-1914, to be installed at this meeting, as follows:

OFFICERS-ELECT FOR 1913-1914: President, George M. Beringer, Camden, N. J.; First Vice-President, Franklin M. Apple, Philadelphia, Pa.; Second Vice-President, W. S. Richardson, Washington, D. C.; Third Vice-President, L. D. Havenhill, Lawrence, Kans.; Members of the Council, 1913-1914, Charles E. Caspari, St. Louis, Mo.; Charles Caspari, Jr., Baltimore, Md.; John G. Godding, Boston, Mass.

The General Secretary moved that the report just read be received and approved, and this motion was seconded by Mr. W. S. Richardson and carried.

The General Secretary presented the report of the Committee on Establishment of Local Branches. This report set forth the efforts made by the committee for the establishment of local branches in the cities of Indianapolis, Detroit, Kansas City and Seattle, and also in the cities of Columbus, Ohio, and Cincinnati. Cincinnati, he said, had established a very excellent and active branch. It had not been in existence long enough to show exactly what it could do, but it had held several very excellent meetings. It embraced in its membership "the *elite* among the pharmacists and the pharmaceutical interests of that fine old city," and there was every reason to be proud of the establishment of the Cincinnati Branch. He predicted it was destined to become one of the best branches in activity and value of labor performed of any in the Association. (See September JOURNAL, p. 1066.)

The General Secretary moved that this report be received and referred for publication, and this motion was seconded by Mr. Anderson and carried.

The General Secretary moved that the report of the Committee on Membership be received and referred to the Council for careful consideration, and this motion had a second in Prof. J. U. Lloyd, of Cincinnati, and prevailed.

The General Secretary said he had a series of resolutions submitted by various delegates, and he would move that without reading, they be received and referred to the House of Delegates for consideration. The President stated that, as this was the regular course of business, and the resolutions should properly

go to the House of Delegates, without objection, the motion would be considered as carried. So ordered.

The General Secretary read a communication from a special committee of the Pennsylvania Pharmaceutical Association, relating to the Procter Memorial Fund.

The President suggested that this letter should properly go to the Council, but Mr. England, Secretary of that body, suggested that it be first referred to the Committee of this Association on Procter Memorial Fund, and referred by that Committee to the Council. This motion was seconded by Mr. Mayo and carried.

The General Secretary then read the report of the Committee on Time and Place. (See September JOURNAL, p. 1067.)

The President called for action upon the report just read, and Dr. John C. Wallace, of Pennsylvania, moved to receive, and that the recommendation of the committee that Detroit be the place of meeting in 1914 be concurred in, and this motion was seconded by Dr. Otto F. Claus, of St. Louis, and carried without dissent.

Chairman John C. Wallace, of the Committee on National Legislation, presented the report of that committee, accompanied by various explanatory remarks. (See September JOURNAL, p. 1067.)

On motion of Geo. F. Payne, of Atlanta, seconded by Frank H. Freericks, of Cincinnati, the report just read was ordered received and referred to take the usual course, as it contained no recommendations.

Mr. Freericks suggested that the hour was now late, nearly half-past one, and that considerable discussion was likely to follow the presentation of the report of the Committee on Drug Trade Conference, which would naturally follow the report just made, and he would move to adjourn. This motion was seconded by Mr. Heusted, of New York.

The General Secretary moved that the report of the Committee on National Legislation be received and referred to the Section on Education and Legislation, with the request that it be read by the author. Mr. Freericks seconded this motion, and it prevailed.

Thereupon the motion to adjourn was put and carried, and the Association stood adjourned, to meet Saturday morning, August 23, 1913, unless called in special session in the meantime.

THIRD GENERAL SESSION.

President Day called the third general session to order Saturday, August 23, at 11:30 a. m. in the assembly hall of the Hotel Hermitage, on the ninth floor.

The Secretary read the minutes of the second general session, held Tuesday morning, August 19. On motion of W. S. Richardson, seconded by Dr. James M. Good, the minutes were ordered approved as read.

Secretary England, of the Council, read the minutes of the fifth, sixth and seventh sessions of that body, held August 20, 21 and 22. (See "Proceedings of the Council" in this issue.)

The President called for action on the minutes of the Council as read, and

the same were, on motion of Dr. J. C. Wallace, seconded by Dr. J. M. Good, approved as read.

Secretary England stated that, immediately following the seventh session of the Council, the new Council for 1913-14 held a meeting for organization, and he read the minutes of that meeting. (See "Proceedings of the Council" in this issue.)

Secretary England then read the minutes of the second session of the new Council, held this date (August 23), during the presentation of which the series of twenty-two resolutions approved by the Council, were, at the request of Secretary England, read by Hugh Craig, of New York. (See September JOURNAL, p. 1040.)

The President called for action upon the minutes of the first and second sessions of the new Council as read, together with the resolutions as reported by the House of Delegates and approved by the Council, and stated that the approval of the minutes carried the adoption of these resolutions.

Thereupon, upon motion of Dr. J. M. Good, of St. Louis, seconded by Prof. Charles Caspari, Jr., of Baltimore, the minutes of the first and second sessions of the new Council were approved and adopted as read.

Dr. H. M. Whelpley, of St. Louis, stated that he desired to offer a motion here, which, ordinarily, would be acted upon by the Council, but which could as well be acted upon by the Association in General Session. His motion was, that the Local Secretary for the 1914 meeting, L. A. Seltzer, of Detroit, be made Chairman of the Local Committee of Arrangements, and authorized to select his associates on that Committee.

This motion was seconded by Prof. C. Lewis Diehl, and carried.

Prof. Charles Caspari, Jr., referring to the series of resolutions emanating from the House of Delegates, which had just been read as approved by the Council, and now adopted by the American Pharmaceutical Association in general session, moved that the Secretary be instructed to send a telegram to the Chairman of the Finance Committee of the United States Senate, and also to the Honorable Francis Burton Harrison, of the House of Representatives, announcing that the American Pharmaceutical Association had voted in approval of the so-called "Harrison Bill" providing for the federal regulation of the traffic in narcotic drugs.

This motion was seconded by Dr. John C. Wallace and carried.

Secretary England read, as coming from the Council, proposals to amend Articles IV and V of the Constitution, as follows:

PROPOSALS TO AMEND ARTICLES FOUR AND FIVE OF THE CONSTITUTION.

It is moved by J. H. Beal, seconded by H. M. Whelpley, that Article IV of the Constitution be amended by striking out the word "or" in the third line, and by inserting after the word state, in the same line, the following words, "Municipal, County, or other securities acceptable as security for postal savings deposits," making the amended section to read as follows:

"Article IV. All moneys received from life membership, together with such funds as may be bequeathed, or otherwise donated to the Association, shall be invested by the Treasurer

in United States Government, State, Municipal, County or other securities acceptable as security for postal savings deposits, the interest of which for any current year only may be used by the Association for its expenses."

Amend Article V of the Constitution so as to read as follows:

"Every proposition to alter or amend this Constitution shall be printed in the JOURNAL at least thirty days prior to the annual meeting; shall be read at the first General Session of the annual meeting, and shall be balloted upon at a subsequent General Session, when, upon receiving the affirmative votes of two-thirds of the members present, shall become a part of this Constitution. Any proposition to amend this Constitution for the purpose of permitting the expenditure of the permanent invested funds of the Association shall require a majority of seven-eighths for its passage."

The President stated that, under the rule, these proposals to amend the Constitution must go over to the next annual meeting.

Secretary England then read, as coming from the Council, the following proposal to amend Article III, Chapter VIII, of the By-Laws of the Association:

Moved by H. M. Whelpley, second by J. A. Koch, that the word "sixteen" in the second line of Article III of Chapter VIII be changed to "six."

The President explained that this motion—as well as other motions to follow—to amend the By-Laws had been proposed before, and was now coming up for a vote. Its adoption required the affirmative vote of three-fourths of the members present. He called for action upon the amendment just read.

On motion of J. H. Beal, seconded by W. S. Richardson, the proposed amendment was adopted.

Mr. England read a proposal to amend Article I of Chapter V of the By-Laws of the Council, as follows:

PROPOSAL TO AMEND ARTICLE ONE, CHAPTER FIVE, OF THE BY-LAWS OF THE COUNCIL

Moved by J. H. Beal, seconded by J. W. England, that Article 1, Chapter V, of the By-Laws of the Council be amended by striking out the whole of the present article after the numeral and inserting the following:

"The Finance Committee shall each year, previous to January 1st, present to the Council for its consideration a list of appropriations to cover the various expenditures of the ensuing fiscal year. No payment shall be made in excess of any of the said appropriations, except by a special vote of the Council. Provided, however, that the Treasurer is authorized to transfer from one appropriation account to another such amount as may be needed at any time, the amount of any such transfer not to exceed the sum of fifty (\$50.00) dollars.

All motions and resolutions involving the expenditure of any sum in excess of \$25.00 shall have the approval of the Finance Committee before being acted upon by the Council.

All appropriations made for any fiscal year shall lapse at the end of the said fiscal year. Provided, however, that accounts properly chargeable against any of said appropriations prior to their expiration, but not received by the General Secretary until after the end of the fiscal year may be paid from such appropriation, in case the warrant for such payment be drawn not later than twenty days after the expiration of the said fiscal year."

On motion of Mr. Beal, seconded by Mr. Richardson, the amendment was adopted as read.

Mr. England read a motion to amend Article II, Chapter V, of the By-Laws of the Association:

PROPOSAL TO AMEND ARTICLE TWO OF CHAPTER FIVE OF THE BY-LAWS OF THE ASSOCIATION.

Moved by J. H. Beal, seconded by A. H. Clark, that Article II of Chapter V of the By-Laws of the Association be amended by striking out of the second line "countersigned by the President, and," so that the Article as amended will read as follows:

"Article II. He shall pay no money except on the order of the General Secretary, accompanied by the proper vouchers."

Mr. Beal, seconded by Prof. C. Lewis Diehl, moved the adoption of the amendment as read, and the motion prevailed.

Mr. England read a proposed amendment to Article I, Chapter III, of the By-Laws of the Association:

PROPOSAL TO AMEND ARTICLE I OF CHAPTER III OF THE BY-LAWS OF THE ASSOCIATION.

Moved by J. H. Beal, seconded by T. F. Main, that Article I of Chapter III of the By-Laws of the Association shall be amended by adding thereto the following:

"He shall give bond for the proper disposition of the funds of the Association which may come into his hands, in such amount as may be prescribed by the Council."

On motion of Dr. H. M. Whelpley, duly seconded, the proposed amendment was adopted.

Mr. England read a motion to amend Article V, Chapter I, of the By-Laws of the Association:

That Article V, Chapter I, of the By-Laws be amended in inserting the words "Honorary President," before the words "Reporter on the Progress of Pharmacy," in the first line.

On motion of Mr. Richardson, duly seconded, the amendment was adopted as read.

Mr. England read a motion to amend Article III, Chapter III, of the By-Laws of the Association:

That Article III of Chapter III be amended by striking out the last two lines, "He shall notify every member at least two weeks in advance of the time and place of each annual meeting."

The President explained that this was intended to do away with the custom of sending out personal notices of the time and place of the annual meeting, such information being now conveyed through the JOURNAL of the Association.

On motion of Mr. Diehl, seconded by Mr. Richardson, this amendment was adopted.

Mr. England read a proposal to strike out Articles V, VI, VII and VIII, of Chapter IX, of the By-Laws of the Association:

That Article V, VI, VII and VIII of Chapter IX be stricken out and the remaining articles of said chapter be numbered in their proper order.

The General Secretary in explanation stated that the By-Laws as they stood fixed the time at which the several Section sessions should be held, and each

Section session was supposed to be held at a certain time, and in a certain order. The proposition was to eliminate all of these articles and leave it to the Council to fix the time at which the Section sessions should be held, and the number of sessions that should be held. This was the object of the amendment. To show how impracticable the present requirements of the By-Laws were, he read Article V, as follows:

"Article V. At the third session the business of the Section on Commercial Interests shall be considered and the Scientific Section shall commence its sessions in accord with the By-Laws of said Scientific Section."

He said this meant, if the language employed was to be strictly observed, that the third session of the Association must always be a session of the Section on Commercial Interests, and no other. He then read the sixth article:

"Article VI. At the fourth and fifth sessions the Section on Pharmaceutical Legislation and Education shall consider the business assigned to that Section."

It was very rarely the case, he said, that the Association has been able to comply with this requirement. By striking out these Articles, from V to VIII, inclusive, the arrangement of the various Section sessions would be left entirely in the hands of the Council.

Thereupon, upon motion of Dr. H. P. Hynson, of Baltimore, duly seconded, the proposed amendment was adopted.

Secretary England read a proposal to amend Article I, Chapter X, of the By-Laws of the Association:

That Article I, Chapter X, be amended by striking out the following: "A Committee on Commercial Interests and a Committee on Education and Legislation, each to consist of five members; a Committee on Practical Pharmacy and Dispensing, a Committee on Historical Pharmacy."

Professor Diehl asked the object of this change, and the General Secretary responded that the By-Laws provided for a *Section* on Education and Legislation, for instance, and named the officers thereof—a Chairman, a Secretary and three Associates; and it was the same with the other Sections. Then, in the article under consideration, it provided for a *Committee* on Education and Legislation, and said that committee should consist of the officers of the Section; and then it went on to give new duties for these. The effect of the amendment would be to transfer the statement of the duties of the Section officers from the article on committees to the section which deals with officers of the Section. Doctor Good had very well explained the matter in Council by calling this "one of the vestiges of the creation of the American Pharmaceutical Association." The committees originally existed, and when the Sections were subsequently created, the correction of this Article I of Chapter X had not properly been changed to correspond.

On motion of M. I. Wilbert, seconded by Dr. J. M. Good, the proposed amendment was adopted.

Mr. England read the following proposal as to Articles II, VI, VII and VIII of Chapter X of the By-Laws of the Association:

That Articles II, VI, VII and VIII of Chapter X be deleted from said chapter, and the duties of the committees therein described be made the duties of the officers of the various

sections, and with the necessary changes in phraseology be inserted as separate articles under Chapter IX."

On motion of W. S. Richardson, duly seconded, this amendment was adopted.

Secretary England read proposals to amend the second, third, eighth, ninth and eleventh rules of the General Rules of Finance, as follows:

PROPOSALS TO AMEND THE GENERAL RULES OF FINANCE.

Moved by J. H. Beal, seconded by H. M. Whelpley, that the General Rules of Finance be amended as follows: Amend the Second Rule of Finance so as to read:

"Said moneys shall be deposited in the name of the American Pharmaceutical Association, and shall be paid out by numbered checks drawn by the Treasurer, on written warrant signed by the General Secretary."

Amend the Third Rule of Finance so as to read as follows:

"The correctness of every bill shall be certified to by the person contracting the same. If approved by the General Secretary, he shall endorse thereon his approval and the appropriation against which the same is to be charged. A warrant shall then be drawn and signed by the General Secretary, upon receipt of which, together with the original bills and their vouchers, the Treasurer shall draw a check for the amount."

Amend the Eighth Rule of Finance by inserting after Treasurer, in the first line, the words "and General Secretary," and also by changing the word "his" in said first line to "their," and the word "his" in the second line to "such."

Amend the Ninth Rule of Finance by inserting after the word Treasurer, in the second line, the words "and General Secretary respectively."

Amend the Eleventh rule of Finance by changing the word "bond" to the plural, and inserting after the word Treasurer the words "and General Secretary."

The President explained that this was simply intended to do away with the present delay in drawing the checks for the payment of bills, which now require the signatures of several officers, and to improve the methods for the approval of bills and the auditing of the accounts of the General Secretary and Treasurer.

On motion of W. S. Richardson, duly seconded, the amendments were adopted.

Secretary England read the proposed amendment to the second paragraph of Article II, of Chapter VIII, of the By-Laws of the Association:

On motion of H. M. Whelpley, seconded by W. R. White, it was decided to recommend that in Article II, Chapter VIII of By-Laws the word "three" at end of second line be changed to "four." The amended paragraph will then read:

"The subscription price for the JOURNAL of the Association shall be four dollars per annum to members and non-members alike."

On motion of Prof. Charles Caspari, Jr., seconded by Prof. E. G. Eberle, the proposed amendment was adopted.

Secretary England read the proposed amendment to Article III, of Chapter VIII, of the By-Laws of the Association:

On motion of H. M. Whelpley, seconded by J. W. England, it was moved that Article III, Chapter VIII, be amended by changing the words "three dollars," to "four dollars," making the amended article read:

"Every member shall pay *in advance* to the Treasurer the sum of *four dollars* as annual dues, and by neglecting to pay said contribution for *six successive months*, may be dropped

from the roll of members. If the annual dues (four dollars) and the annual subscription to the JOURNAL (four dollars) be paid at one and the same time, a reduction of three dollars shall be allowed."

The President said that this did not, of course, change the present dues when paid in the regular way, but was simply to provide for those who might elect to be members and subscribers separately.

On motion of Prof. Eberle, duly seconded, this amendment was adopted.

Mr. Gordon here moved to reconsider the vote by which Resolution No. 23 was adopted—a resolution providing for such "synonyms as will compel uniformity of product, and eliminate the opportunity for much unfair competition;" and to strike out the word "much," previous to the words "unfair competition," and that the resolution read "unfair competition," without the qualifying word "much."

This motion was seconded by Dr. H. P. Hynson, and carried.

The President called on the General Secretary for the reports of such additional standing committees as he might have.

General Secretary Beal said he had the report of the Committee on President's Address, and requested Mr. White, of Nashville, the only member of the committee present, to read it.

President Day called E. G. Eberle, of Texas, to the chair while this report was read and considered. (See September JOURNAL, p. 1038.)

The Chair called for action, and Dr. H. M. Whelpley moved that the report be received and that the recommendations contained therein be adopted.

Secretary Beal said that he was ready to second this motion, but wished first to call particular attention to several of the recommendations made. For instance, the recommendation: "We recommend that the Association furnish a suitable binder for holding the year's numbers of the JOURNAL." Nothing was said here as to whether this binder should be furnished free or at cost, and it might cost a thousand dollars to furnish these.

Dr. H. P. Hynson said he would like to amend Dr. Whelpley's motion to the effect that the report be adopted, except where the matter of finance was involved, and that that particular recommendation be referred to the Council.

Mr. White said the idea of the committee was to have a suitable binder on sale by the General Secretary, to be purchased by the members, and, if necessary, to have the Journals punched, or some other suitable device provided, so that the monthly numbers of the JOURNAL could be bound together for the year, and not scattered around and lost, as was frequently the case.

George M. Beringer said there were some recommendations here that there might be a little difference of opinion about. He thought it might be well to take them up *seriatim* and run over them hurriedly. One recommendation he had in mind was that the Board of Canvassers be increased to five. He suggested that the Canvassing Board be not increased to above three members, and that it be empowered to employ clerical assistance, if needed. It was not always possible to secure the services of five good men on this board, while it was generally possible to secure three.

Dr. H. P. Hynson asked Mr. Beal if, as editor of the JOURNAL, under the recommendations of this committee, he would be compelled to publish formulas intended for the Recipe Book in all the Journals. He thought it very desirable

that the formulas intended for the Recipe Book should be, for the present, published in one issue of the JOURNAL for the year, so that it could be used as a Formulary until the book came out.

General Secretary Beal read the recommendation and replied that, as he understood the recommendation, he would be required to publish the material as it came to hand. He thereupon moved as a substitute for the motion that the report of the Committee on President's Address be received and referred to the Council, with favorable recommendation upon the propositions contained therein.

Dr. Whelpley said that, with consent of his second, he would withdraw his motion, and accept the motion as proposed by Mr. Beal.

The motion of Mr. Beal was thereupon put to a vote and carried unanimously.

President Day resumed the chair and called for further reports.

The General Secretary said he had the report on the Progress of Pharmacy, and that from the Committee on National Formulary, of which Prof. C. Lewis Diehl was Chairman.

Professor Diehl read what he called a concise statement of the status of the Reports on the Progress of Pharmacy for 1912-13. (See September JOURNAL, p. 1065.)

Professor Diehl then read the report of the work done by the Committee on National Formulary during the past year. (See September JOURNAL, p. 1063.)

The President called for action on the two reports just submitted.

Thereupon, F. T. Gordon moved that the reports and the recommendations be approved, and that they be referred for publication in the usual way. This motion was seconded by H. M. Whelpley.

General Secretary Beal read the report of the Committee on Procter Memorial Fund. (See September JOURNAL, p. 1078.)

The President said he was sure it was a source of great regret that this matter, which was of prime importance, should have come up so late at the last general session.

Charles Caspari, Jr., as a member of the Committee, moved the acceptance of the report, and the adoption of the recommendation made by the Committee for the appointment of a Committee of Seven at this meeting, to take any further steps necessary for completing the object for which the Committee was appointed. The funds, he said, were in the hands of the Treasurer, drawing interest until such time as they might be needed; and a sculptor had been communicated with. The Committee, however, would be at liberty to consult others and get their further advice. He thought some definite steps should now be taken to get Congress to set aside a site in the Smithsonian Grounds at Washington, and for the making of a contract with a competent sculptor to do the work.

The President asked Professor Caspari if he intended this Committee to be appointed by the incoming President, and Professor Caspari replied that he had no preference, and that it could perhaps be attended to at this session.

J. M. Good, of St. Louis, seconded the motion as made.

George M. Beringer said he could not approve the idea that this Committee, which had done such excellent work, and brought this matter so near to completion, should now drop out and be deprived of the honor they deserved to have for carrying out this project from its inception to its completion. To now ap-

point an entirely new Committee of seven members would mean that the new Committee must first acquaint itself with a project with which the old committee was already acquainted. His own suggestion to Chairman Hancock was, that his Committee of Twenty should be continued, and that the Committee should appoint an Executive Sub-Committee, to carry on the work, of men fully acquainted with the project. He thought this Association, to meet the sole object Professor Caspari had in view, should recommend that it remain with the original Committee, where he firmly believed it should remain.

H. P. Hynson said he favored Mr. Beringer's idea even if not acceptable to Doctor Hancock and his Committee. He said he would even work against the thing, if the same membership did not have to do with all connected with the finishing up of this monument.

Secretary Beal asked Professor Caspari to repeat his motion, and the gentleman stated that his original motion was, "that the Association accept the report of the Committee and adopt the recommendations therein stated, and that a Committee of Seven be appointed at this meeting, in conformity with the recommendation of the Committee on Procter Memorial, to carry out this project."

The Secretary said it appeared that the recommendation of the Committee itself was that a Committee of Seven be appointed, and it seemed to him that the report should be received and the recommendation adopted; then this Committee of Seven could be selected from the old Committee, which would answer all purposes.

Mr. Beringer said this was practically his view of the matter.

By this time Chairman Hancock, of the Committee, had come in, and said this matter had been carefully considered, and that there was one gentleman, not a member of the Committee, he would like to have on it, as he would be an interested and valuable member, and it would be very appropriate that he should have a place on the Committee. He referred to Professor Joseph P. Remington, the successor of Procter, and a man who knew Procter personally. He thought it quite important that the sculptor's work should be criticised by somebody who knew Procter in his lifetime. Doctor Hancock said Professor Remington had told him that Procter had a daughter living in Florida, and of course it was desirable to get in touch with her. His idea was to have a committee composed, with the exception of Professor Remington, of members of the present Committee; but to have them in easy reach of each other, so there would be no undue loss of time in communicating. The Committee had had trouble along that line, and it was desirable to avoid that. No reflection was intended on the members of the old Committee, for they had done their part as far as they could; but if the Committee was composed of seven members within easy reach of one another it would be much better than to have a more cumbersome committee that could not be gotten together.

Dr. Henry Kraemer, of Philadelphia, said the intention of the Committee seemed to be exactly as Mr. Hancock had expressed it. It was desirable to have a smaller committee to go ahead and do the work, and report to the Council and the Association.

The General Secretary said that, as he understood the motion in its final form, as made by Professor Caspari, amended by Mr. Beringer, and seconded by Mr.

Good, it was "that the report of the Committee on Procter Memorial Fund be received and the recommendations contained therein adopted, that the Committee on Procter Memorial be continued, and that the Committee be empowered to appoint an Executive Committee of seven members of the Association to carry the work to completion."

Professor Caspari said this thoroughly expressed his views, and asked if the power conveyed in the amendment would carry with it the authority to go ahead and close a contract with the sculptor. He said his idea originally was that the Committee should be given power to act from time to time, and to report to the Council their action.

Mr. Beringer said this was his idea, that the Committee should carry the work to completion, with the approval of the Council.

There were calls of "Question!" and the motion as stated by the Secretary was put to a vote and carried.

On motion of the General Secretary, seconded by H. M. Whelpley, it was ordered that the report of the International Committee on Pharmaceutical Nomenclature be received and referred to take the usual course. (See September JOURNAL, p. 1079.)

The report of the Committee on Status of Pharmacists in the Government Service was read by Chairman Richardson.

F. T. Gordon said the Chairman of the Committee had overlooked a very important thing: At the last regular session of Congress, the pharmacists in the Navy were given commissions, with the rank of "Chief Pharmacist," and he knew that commissions to some of these men were issued some time last spring. The bill was passed this year, at the last session of the previous Congress.

The President reminded Mr. Gordon that the pharmacists in the United States Public Health Service had also received recognition, and Mr. Gordon agreed and said they had received an increase of pay and standing. Mr. Richardson suggested not in their standing, and the Chair agreed.

H. M. Whelpley moved that the report be received, and, with the comments that had been made, that it be referred to take the usual course. This motion prevailed.

The General Secretary reported that he had nothing further on his desk for the attention of the Association.

The President asked if there was any new business to come before the Association.

H. P. Hynson said that, for some months past, he had been studying National organizations, which applied to pharmacy, and he had been amazed at the completeness of such organizations. He wished to suggest the necessity of trying to better coordinate the work of these National bodies. The picture might be represented, he said, by his hand—in the "tailorette" style. The palm of his hand would represent the American Pharmaceutical Association (suited the action to the word); his thumb would represent the National Association of Retail Druggists; the index finger would represent the National Wholesale Druggists' Association; the middle finger, the National Proprietary Association; the third finger, the Conference of Pharmaceutical Faculties, while his little finger would

represent the new National Drug Clerks' Association—all converging into the American Pharmaceutical Association as the great center. He proposed that the Council consider the propriety of establishing a Conference Committee on Program and Meeting, to see if all these meetings could not be concentrated. He did not mean that all should meet in the same week, but that all these allied bodies should meet the week previous to the A. Ph. A. meeting, and then let them all come in and report the results of their deliberations and work to the American Pharmaceutical Association. He moved that the Council consider the propriety of establishing such a Conference, for the better arrangement of the meetings of these National Associations applying to pharmacy.

This motion was seconded by H. M. Whelpley and carried.

The President stated that the time had now come for the installation of the officers-elect, and he asked Mr. Mason, of Detroit, and Dr. Hynson, of Baltimore, to act as a Committee of Escort, to conduct the new officers to the rostrum.

The Committee handsomely acquitted themselves of this agreeable duty, and began by bringing forward President-elect George M. Beringer, of Camden, New Jersey, whom Dr. Hynson introduced as a worthy successor to President Day, and said the Association had not only honored Mr. Beringer in this selection, but had honored itself and American Pharmacy at the same time.

President Day welcomed Mr. Beringer as his successor in the heartiest terms, and said he could wish for him nothing better than that he might have the same earnest support and cheerful courtesy shown him that had always been extended to him. Then, suiting the action to the word, he said it gave him pleasure to attach to the lapel of his coat the badge of the high office he was assuming.

Mr. Beringer: "Members of the American Pharmaceutical Association, I want to thank you for the honor which has come to me without any solicitation on my part, and very unexpectedly. I appreciate it as the highest honor that can be conferred in American Pharmacy. This grand old Association, which has lived since 1851, has accomplished much for Pharmacy. It has before it yet vast fields for exploration, and its conquests in the future, I believe, will be far more distinctly progressive than any in the past. In assuming this added responsibility, I am aware of the fact of my own inefficiency. I was cautioned by one of my best friends in the Association that I was following in the footsteps of an illustrious line of predecessors. As I look over the list of good names that have filled the position of President of your Association since the first President, Daniel B. Smith, was elected and installed, I realize that this admonition was very true, indeed; and I appreciate still more the responsibility that comes to me as the successor of this illustrious line. I am impressed by the words of my predecessor, that he has had the courtesy and the support of his associates; and I want to beseech now the support, the good-will and the cooperation of every member of this Association. No one man can make it a success; no one man can have a successful *regime* of a year, or accomplish anything for this organization, unless he has the support, unanimously, of the entire Association. I am open to suggestion; I welcome advice from every member. Do not hesitate to write to me or call and see me, and suggest anything that will mean the advancement of the American Pharmaceutical Association. I will pledge you my earnest

efforts to make this a year of progress, so far as my ability and my time will permit. Gentlemen, I am exceedingly thankful to you for the honor you have conferred upon me."

President Beringer assumed the Chair, and stated that the installation of the First Vice-President-elect was the next order, and this was Francis M. Apple, of Philadelphia. He stated that Mr. Apple was not present, however, on account of physical indisposition. He had had a conversation with him a week or two ago, and Mr. Apple had asked that his greetings and best wishes be extended to the Association, with an expression of his regret that he could not be present.

At the request of the Chair, the Committee then brought forward Second Vice-President-elect W. S. Richardson, of Washington City, and Mr. Mason in introducing the gentleman said that it seemed to be peculiarly fortunate that in the Second Vice-President the Association had selected a man who was equally prominent in the affairs of the National Association of Retail Druggists, and it suggested in a very happy manner the close friendship and harmony and unity of spirit which existed between the American Pharmaceutical Association and its newer brother, the N. A. R. D.

Mr. Richardson said he esteemed it a very great honor to be elected one of the Vice-Presidents of this Association, and he appreciated it accordingly. He said it would be a great pleasure to him to work for the advancement of pharmacy.

Third Vice-President-elect L. D. Havenhill, of Kansas, was not present.

The Committee next brought Treasurer-elect Henry M. Whelpley, of St. Louis; Reporter on the Progress of Pharmacy-elect C. Lewis Diehl, of Louisville, and General Secretary-elect James H. Beal, of Scio, Ohio, to the rostrum, where Mr. Mason introduced them as "the Great Triumvirate—the intellectual dynamos who regulate and control the affairs of the Association."

The Committee then brought forward Messrs. John G. Godding, of Boston, and Charles Caspari, Jr., of Baltimore, Members-elect of the New Council, the third Member-elect, Charles E. Caspari, of St. Louis, having left the city, and Dr. Hynson introduced Messrs. Godding and Caspari in fitting terms.

The Committee, as their final official act, escorted Chairman-elect of the Council E. G. Eberle, of Dallas, Texas, and Secretary-elect of the Council Joseph W. England, of Philadelphia, to the rostrum, and introduced them.

The President then asked if any member of the Association had any matter of interest that he desired to present before the Association.

Mr. Wilbert said he believed that the members owed the Local Secretary and his able assistants a very hearty vote of thanks for the entertainment at Nashville — an entertainment which had been unique, despite the weather,—and he believed every member of the American Pharmaceutical Association present would go away with the kindest feelings towards Nashville, and particularly towards the pharmacists of Nashville, who would be remembered for all the days to come for what they had done.

This motion was very heartily seconded by Mr. Day, Mr. Hynson and others.

Mr. Hynson said that he thought this was an occasion for him to "expand" himself. He had heard it said that there was never a child born south of the Ohio River, and between the mountains on the east and the Mississippi River on

the west, but what his first words were, "My Fellow Citizens!" or "Gentlemen of the Jury!" He felt some pride on this occasion in appearing here and proving that there were others, including Craig and himself, who could speak out and say what they thought. If he could say any words to express his appreciation of their great kindness, their great ability to show hospitality, in a way not at all obtrusive, but in a way to touch the heart, he would like for those words to convey that meaning to the good people of Nashville—and especially to the ladies! for they had done the honors of this occasion in a way that could not fail to appeal to the members of this Association. The American Pharmaceutical Association would always be ready, at the proper time, to accept an invitation to return to Nashville.

Mr. Mason moved to extend this motion to include the thanks of the Association to the local press of Nashville. He said he had been attending meetings of the American Pharmaceutical Association for some thirteen or fourteen years, and never before had he seen the reports of the Association's doings so admirably set forth in the newspapers as had been done during this meeting. He thought he could pay the local papers the highest compliment when he said that, as editor of a pharmaceutical journal, he had never before been able to use clippings from the newspapers for his own publication, because the reports had been absolutely worthless for such purpose; whereas, at Nashville, he had cut them out every day and kept them. He said he was almost sorry that he had not, on the score of expense,—not on the score of hospitality,—"stayed at home and got what he wanted from newspaper reports."

Mr. Beal said that, as an officer of the Association, he desired to second the motion of Mr. Mason. The newspapers in late years had usually been lavish in space devoted to the meetings of the American Pharmaceutical Association, but never before in his recollection had the reports of the local press done the subject justice. As a rule, they had been so badly mangled, especially when dealing with technical matters, as to be the reverse of agreeable to the members who read them. This year, however, the Association not only had the press to thank for quantity, but for the excellent quality of the publicity that had been received at the hands of the Nashville papers. It would be difficult for him to single out one more deserving than another, for when he would find some point extraordinarily represented in one paper, the next paper would show some other point equally well represented. He joined heartily in seconding the motion of Mr. Mason.

Mr. Wilbert said he would very gladly accept this amendment to his original motion.

Thereupon, by a rising vote, the motion of Mr. Wilbert, as amended by Mr. Mason, was carried unanimously.

There being no further business before the Association, on motion of Mr. England, seconded by Mr. Good, an adjournment *sine die* was had.

PROCEEDINGS OF THE COUNCIL.

(Third Session of the Council for 1912-13.)

The third session¹ of the Council of the American Pharmaceutical Association for 1912-13 was held in the Assembly Room at Hotel Hermitage, Nashville, Tenn., on Monday, August 18, 1913, at 10 a. m.

Present: Messrs. Packard, Godding, Main, LaPierre, Koch, Beal, Eberle, England, Good, Clark, Teeters, Diehl, Eldred, Whelpley, Asher, Alpers, Day, White, and Remington.

The reading of the minutes of the previous meeting was, on motion, dispensed with.

Applicants for membership from Nos. 279 to 327, inclusive, were elected, as follows:

No. 279. Henry Gibbons Posey, 1128 Peniston St., New Orleans, La., rec. by H. M. Whelpley and J. W. Mackelden.

No. 280. James A. Finley, Lawrenceburg, Tenn., rec. by Ira B. Clark and J. O. Burge.

No. 281. Ignatius Kingman, East Grand Fork, Minn., rec. by H. M. Whelpley and J. W. Mackelden.

No. 282. Edward Hulbert Niles, 1500 E. Michigan St., Indianapolis, Ind., rec. by Burton Cassaday and W. H. Rudder.

No. 283. Theophilus Zimmermann, Rose Tree Dispensary, 17th and Cherry Sts., Terre Haute, Ind., rec. by E. A. Ruddiman and William R. White.

No. 284. Chilton Scott Porter, 430 E. Maxwell St., Lexington, Ky., rec. by Linwood A. Brown and J. W. England.

No. 285. Rogers Americus Barksdale, Overton, Texas, rec. by William R. White and E. A. Ruddiman.

No. 286. Ezekiel Spry, care Chief Surgeon, Philippine Department, Manila, P. I., rec. by Frederick R. Williams and Edgar T. Hitch.

No. 287. Jesse St. John Davenport, care Chief Surgeon, Philippine Department, Manila, P. I., rec. by Frederick R. Williams and Edgar T. Hitch.

No. 288. William McFarland, Fort Mills, P. I., rec. by Frederick R. Williams and Edgar T. Hitch.

No. 289. Stonewall Jackson McMahon, 837 East South St., Batesville, Ark., rec. by John B. Bond, Sr., and Lotta K. Snodgrass.

No. 290. Samuel Meyer, 229 13th St., College Point, L. I., N. Y., rec. by Caswell A. Mayo and J. W. England.

No. 291. Joseph O. E. Hummel, 5144 Hazel Ave., West Philadelphia, Pa., rec. by J. F. Pearson and H. M. Whelpley.

No. 292. Charles Herbert Rogers, care Pharmacy Department, University of Minnesota, Minneapolis, Minn., rec. by H. M. Whelpley and J. W. England.

No. 293. John Grover Beard, Chapel Hill, N. C., rec. by K. E. Bennett and J. O. Burge.

No. 294. Harry Seldon Arrington, 244 Church St., Norfolk, Va., rec. by E. L. Brandis and T. A. Miller.

No. 295. L. D. Brunk, Jr., Nowata, Okla., rec. by F. B. Lillie and W. B. Day.

No. 296. S. M. Scott, Jr., Terra Alta, W. Va., rec. by F. B. Haymaker and W. B. Day.

No. 297. Carroll A. B. Jensen, 333 S. Montana St., Butte, Montana, rec. by G. D. Timmons and A. W. Linton.

No. 298. Robert Loyal Perkins, Valparaiso, Ind., rec. by G. D. Timmons and A. W. Linton.

No. 299. Rafael Martin Mendez, Wall St., Lares, Porto Rico, rec. by G. D. Timmons and A. W. Linton.

No. 300. William Karl Krallman, 432 W. 3rd St., Davenport, Iowa, rec. by Wilber J. Teeters and R. A. Kueyer.

No. 301. Richard Franklin Morgan, 139 W. Oakwood Place, Buffalo, N. Y., rec. by Albert M. Rochrig and George Reiman.

No. 302. Charles Henry Bader, 713 11th Ave. S., Nashville, Tenn., rec. by J. O. Burge and E. A. Ruddiman.

¹The first and second sessions of the Council for 1912-13 were held at Denver, Col., Aug. 22 and Aug. 24, 1912.

- No. 303. A. B. Hall, 219 N. Senate Ave., Indianapolis, Ind., rec. by Thos. J. Shannon and E. C. Finch.
- No. 304. Henry Bertrams, Augusta, Ky., rec. by William R. White and J. O. Burge.
- No. 305. Robert McGreal, Oglethorpe, Bartow, Florida, rec. by E. A. Ruddiman and J. T. McGill.
- No. 306. Carl E. Weise, 2705 West End Ave., Nashville, Tenn., rec. by William R. White and E. A. Ruddiman.
- No. 307. Joseph Rosin, 9th and Parrish Sts., Philadelphia, Pa., rec. by A. G. Rosengarten and Frederick Rosengarten.
- No. 308. Robert E. Grace, 334 Chartres St., New Orleans, La., rec. by Philip Asher and J. W. England.
- No. 309. James Arthur Stirling Woodrow, 317 Broadway, Cambridge, Mass., rec. by E. C. Marshall and C. F. Nixon.
- No. 310. G. Hanserd King, 10th and Buchanan Sts., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 311. Joel Guilford Brumit, 1709 Joe Johnston Ave., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 312. Gus A. Blodan, 1235 5th Ave., N., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 313. James K. Goodloe, 1518 Hawkins St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 314. Charles Bell Whitworth, 1334 Jefferson St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 315. William Charles Kraemer, Wood Avenue, Linden, N. J., rec. by David Strauss and J. H. Beal.
- No. 316. Julius M. Rogoff, Medical Department, Vanderbilt University, Nashville, Tenn., rec. by William R. White and Samuel C. Davis.
- No. 317. Sam Sandopher Bradshaw, 700 Woodland St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 318. Ernest J. Schott, 602 Fatherland St., Nashville, Tenn., rec. by E. A. Ruddiman and S. C. Davis.
- No. 319. James Roy Mansfield, 1001 Jefferson St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 320. Oscar Jones Nance, Jackson, Tenn., rec. by Ira B. Clark and J. B. Sand.
- No. 321. Arlie Lu Wadler, 2101 8th Ave., S., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 322. Robert J. Kleiser, 422 Fifth Ave., S., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 323. August Nickel, 4th Ave., South and Ash St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 324. Anderson Miller Webb, Jefferson and 4th Ave., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.
- No. 325. George D. Siroh, Pittston, Pa., rec. by Louis Emanuel and Lucius L. Walton.
- No. 326. John Stedman McDonald, Lumberton, N. C., rec. by K. E. Bennett and J. O. Burge.
- No. 327. Jonas Y. Waddman, 105 8th Ave., North, Nashville, Tenn., rec. by William R. White and C. C. Young.

The Committee on Credentials presented a report, which was referred to the House of Delegates.

The Report of the Committee on Revision of the Constitution and By-Laws was presented, as follows:

REPORT OF COMMITTEE ON REVISION OF CONSTITUTION AND BY-LAWS.

To the Members of the Council:

GENTLEMEN:—At the Denver (1912) meeting of the Association your committee presented a comprehensive report which was received, ordered printed in the JOURNAL, and its further consideration postponed until the present meeting; and reprints were directed to be made of the report, and the existing Constitution and By-Laws so as to facilitate consideration of the subject-matter and the proposed changes.

Your committee has little to add to its 1912 report, except to urge upon the Association the necessity of simplifying our present method of paying bills. The rules (General Rules of Finance, Third) provide that:

"All bills due by the Association shall be paid by numbered checks on a banking company, the checks, when returned to the Treasurer, to be attached to the several vouchers.

"The correctness of the bill shall be certified to by the person contracting the same. After approval by the General Secretary, he shall endorse upon the bill the appropriation against which it is to be charged, and submit it to the Chairman of the Finance Committee for his approval. A warrant shall then be drawn and signed by the General Secretary and the President, upon receipt of which the Treasurer shall draw a check for the amount."

With the increase of the business of the Association, in recent years, this method has become cumbersome and has caused much delay in the payment of bills.

It seems to your committee that there is no necessity for drawing warrants to pay bills. Bills should be certified by the persons contracting the same, approved by the General Secretary, and sent by him to the Treasurer for approval and payment.

Such a method would be simple and efficient, and the Association would be amply protected. No money of the Association can be used except by a specific appropriation, endorsed by the Finance Committee and approved by the Council.

The Finance Committee submits to the Council each year, previous to January 1, for approval, a budget of appropriations and no payment can be made in excess of such appropriation except by special vote of the Council. The Treasurer is bonded.

The method of payment of dues to the Association and subscriptions to the JOURNAL, needs some readjustment, and has been reported to the Council by the Committee on Publication, and will come up for consideration by the Association later.

Respectfully submitted,

J. W. ENGLAND, Chairman.

AUGUST 18, 1913.

The report was received.

A number of amendments to the Constitution and By-Laws were proposed and recommended for submission to the General Session of the Association, as follows:

PROPOSALS TO AMEND ARTICLES IV AND V OF THE CONSTITUTION.

Moved by J. H. Beal, seconded by H. M. Whelpley, that Article IV of the Constitution be amended by striking out the word "or" in the third line, and by inserting after the word "state," in the same line, the following words, "Municipal or County," making the amended section to read as follows:

"Article IV. All moneys received from life membership, together with such funds as may be bequeathed, or otherwise donated to the Association, shall be invested by the Treasurer in United States Government, State, Municipal, County or other securities acceptable as security for postal savings deposits, the interest of which for any current year only may be used by the Association for its expenses."

Amend Article V of the Constitution so as to read as follows:

"Every proposition to alter or amend this Constitution shall be printed in the JOURNAL at least 30 days prior to the annual meeting; shall be read at the first General Session of the annual meeting, and shall be balloted upon at a subsequent General Session, when, upon receiving the affirmative votes of two-thirds of the members present, it shall become a part of this Constitution. Any proposition to amend this Constitution for the purpose of permitting the expenditure of the permanent invested funds of the Association shall require a majority of seven-eighths for its passage."

As required by the Constitution, the above amendments will lie over until the next annual meeting for action.

PROPOSAL TO AMEND ARTICLE I, CHAPTER V, OF THE BY-LAWS OF THE COUNCIL.

Moved by J. H. Beal, seconded by J. W. England, that Article I, Chapter V, of the By-Laws of the Council be amended by striking out the whole of the present article after the numeral and inserting the following:

"The Finance Committee shall consist of three members and shall, each year, previous to January 1, present to the Council for its consideration a list of appropriations to cover the

various expenditures of the ensuing fiscal year. No payment shall be made in excess of any of the said appropriations, except by a special vote of the Council. Provided, however, that the Treasurer is authorized to transfer from one appropriation account to another such amount as may be needed at any time, the amount of any such transfer not to exceed the sum of fifty dollars (\$50.00).

"All motions and resolutions involving the expenditure of any sum in excess of \$25.00 shall have the approval of the Finance Committee before being acted upon by the Council.

"All appropriations made for any fiscal year shall lapse at the end of the said fiscal year. Provided however, that accounts properly chargeable against any of said appropriations prior to their expiration, but not received by the General Secretary until after the end of the fiscal year, may be paid from such appropriation, in case the warrant for such payment be drawn not later than twenty days after the expiration of the said fiscal year." Carried.

PROPOSAL TO AMEND ARTICLE II OF CHAPTER V OF THE BY-LAWS OF THE ASSOCIATION.

Moved by J. H. Beal, seconded by A. H. Clark, that Article II of Chapter V of the By-Laws of the Association be amended by striking out of the second line "countersigned by the President, and," so that the Article as amended will read as follows:

"Article II. He shall pay no money except on the order of the General Secretary, accompanied by the proper vouchers." Carried.

PROPOSAL TO AMEND ARTICLE I OF CHAPTER III OF THE BY-LAWS OF THE ASSOCIATION.

Moved by J. H. Beal, seconded by T. F. Main, that Article I of Chapter III of the By-Laws of the Association shall be amended by adding thereto the following:

"He shall give bond for the proper disposition of the funds of the Association which may come into his hands, in such amount as may be prescribed by the Council." Carried.

PROPOSALS TO AMEND CERTAIN ARTICLES OF CHAPTERS I, III, VIII, IX, AND X.

Moved by J. H. Beal, seconded by A. H. Clark:

(1) That Article V, Chapter I, of the By-Laws be amended by inserting the words "Honorary President," before the words "Reporter on the Progress of Pharmacy," on the first line. Carried.

(2) That Article III of Chapter III be amended by striking out the last two lines, "He shall notify every member at least two weeks in advance of the time and place of each annual meeting." Carried.

(3) That Article V, VI, VII and VIII of Chapter IX be stricken out and the remaining articles of said chapter be numbered in their proper order. Carried.

(4) That Article I, Chapter X, be amended by striking out the following: "A Committee on Commercial Interests and a Committee on Education and Legislation, each to consist of five members; a Committee on Practical Pharmacy and Dispensing, a Committee on Historical Pharmacy." Carried.

(5) That Articles II, VI, VII and VIII of Chapter X be deleted from said chapter, and the duties of the committee therein described be made the duties of the officers of the various sections, and with the necessary changes in phraseology be inserted as separate articles under Chapter IX." Carried.

Moved by H. M. Whelpley, seconded by J. A. Koch, that the word "sixteen" in the second line of Article III, Chapter VIII, be changed to "six" making the amended article read:

"Every member shall pay *in advance* to the Treasurer the sum of *three* dollars as annual dues, and by neglecting to pay said contribution for *six* successive months may be dropped from the roll of members. If the annual dues (three dollars) and the annual subscription to the JOURNAL (three dollars) be paid at one and the same time, a reduction of one dollar shall be allowed." Carried.

PROPOSALS TO AMEND THE GENERAL RULES OF FINANCE.

Moved by J. H. Beal, seconded by H. M. Whelpley, that the General Rules of Finance be amended as follows: Amend the Second Rule of Finance so as to read:

"Said moneys shall be deposited in the name of the American Pharmaceutical Association,

and shall be paid out by numbered checks drawn by the Treasurer, on written warrants signed by the General Secretary." Carried.

Amend the Third Rule of Finance so as to read as follows:

"The correctness of every bill shall be certified to by the person contracting the same. If approved by the General Secretary, he shall endorse thereon his approval and the appropriation against which the same is to be charged. A warrant shall then be drawn and signed by the General Secretary, upon receipt of which, together with the original bills and other vouchers, the Treasurer shall draw a check for the amount." Carried.

Amend the Eighth Rule of Finance by inserting after Treasurer, in the first line, the words "and General Secretary," and also by changing the words "his" in said first line to "their," and the word "his" in the second line to "such." Carried.

Amend the Ninth Rule of Finance by inserting after the word Treasurer, in the second line, the words "and General Secretary respectively." Carried.

Amend the Eleventh Rule of Finance by changing the word "bond" to the plural, and inserting after the word Treasurer the words "and General Secretary"; also omit the word "for" from the second line. Carried.

The report of the Secretary of the Council was presented, and on motion, filed. It was as follows:

REPORT OF THE SECRETARY OF THE COUNCIL.

To the Members of the Council:

GENTLEMEN—The Council held two sessions at the Denver (1912) meeting and has transacted business by mail since.

Eighteen Council Letters have been issued, covering 44 pages and 33 motions.

The members elected to date number 325; the number last year by the first session of the Council was 379.

A synopsis of the motions of the Council will be submitted, and become a part of the records. The minutes up to July 24, 1913 (Council Letter No. 18) have been published in the JOURNAL.

The membership of the Council now numbers 37, of which fourteen are Local Branch representatives.

The three members of the Council elected by mail on November last, for 1913-14 were: Charles Caspari, Jr., of Maryland, Charles E. Caspari, of Missouri, and John G. Godding, of Massachusetts.

Respectfully submitted,

August 18, 1913.

J. W. ENGLAND, Secretary of the Council.

The Secretary also submitted a synopsis of motions acted upon by the Council since the 60th annual convention, as follows:

SYNOPSIS OF MOTIONS OF THE COUNCIL, 1912-1913.

Motion No. 1—That the General Secretary be authorized to purchase one hundred (100) Pamphlet Cases for the preservation of pamphlets and other documents now at the General Secretary's office. Carried.

Motion No. 2—Election of Members Nos. 1-17 inclusive. Carried.

Motion No. 3—That the sixty-first annual meeting at Nashville be held during the week beginning August 25, 1913. Carried.

Motion No. 4—Election of Members, Nos. 18-29 inclusive. Carried.

Motion No. 5—That an additional appropriation of \$1200 for JOURNAL and \$500 for Printing, Postage and Stationery be made. Carried.

Motion No. 6—That the latest date for proposed Legislative Conference be changed from January 1, 1913, to February 1, 1913.

Motion No. 7—That the sum of Twenty-five (\$25) Dollars be appropriated as the A. Ph. A. appropriation for expenses of the National Syllabus Committee. Carried.

Motion No. 8—That the recommendation of the House of Delegates that no appointment

of members to a board proposed by the National Association of Pharmacologists be approved. Carried.

Motion No. 9—The Finance Committee submits for approval the following:

Proposed Budget of Appropriations for 1913.

Item.	
1. Salaries	\$5,500 00
2. Journal	5,000 00
3. Printing and Stationery	1,000 00
4. Clerical Expenses, Secretary's office.....	1,000 00
5. National Formulary	1,000 00
6. Miscellaneous Expenses	300 00
7. Stenographers	250 00
8. Traveling Expenses	200 00
9. Committee on Membership.....	250 00
10. Committee on Unofficial Standards.....	300 00
11. Proceedings	100 00
12. Badges and Bars.....	50 00
13. Certificates	50 00
14. Premium on Treasurer's Bond.....	37 50
15. Freight, Expressage and Drayage.....	150 00
16. Journals for Reporters.....	35 00
17. Section on Scientific Papers	25 00
18. Section on Education and Legislation	25 00
19. Section on Commercial Interests	25 00
20. Section on Practical Pharmacy	25 00
21. Section on Historical Pharmacy	50 00
	<hr/>
	\$15,372 50

Motion carried.

Motion No. 10—Election of Members Nos. 30-39 inclusive. Carried.

Motion No. 11—That an appropriation of \$25 (Item 22) be made to the Section on Pharmacopoeias and Formularies for 1913. Carried.

Motion No. 12—That the date provided in the General Rules of Finance (Rule Tenth) for balancing and auditing the books of the General Secretary and Treasurer, be changed to correspond to the changes made in the by-laws at the 59th and 60th annual conventions. Carried.

Motion No. 13—That the General Secretary, Treasurer and Secretary of the Council be made a special committee to readjust the prices for the sale of bound volumes of the Proceedings, and that this committee be also authorized to name a special price to Libraries of Colleges of Pharmacies and similar institutions. Carried.

Motion No. 14—That the sum of \$100.00, or so much thereof as is necessary, be appropriated to cover the expense of the delegates to the National Legislative Conference held at Washington, D. C., January 15, 1913. Carried.

Motion No. 15—Election of Members Nos. 40-59 inclusive. Carried.

Motion No. 16—That the time of the 1913 Annual Meeting be changed to the week beginning August 18, 1913. Carried.

Motion No. 17—That Fred L. Frauenhoff, Aurora, Illinois, be made a life member, old style, without the publications of the A. Ph. A. Carried.

Motion No. 18—That the sum of Twenty-five (\$25.00) Dollars be appropriated to the use of the Women's Section of the American Pharmaceutical Association. Carried.

Motion No. 19—Election of Members Nos. 60-97 inclusive. Carried.

Motion No. 20—That permission be granted to form Cincinnati Branch of the American Pharmaceutical Association. Carried.

Motion No. 21—Election of members Nos. 98 to 117 inclusive. Carried.

Motion No. 22—That the sum of \$25 be appropriated for the use of the National Drug Trade Conference. Carried.

Motion No. 23—Election of Members Nos. 118-154 inclusive. Carried.

Motion No. 24—That the sum of \$100 or so much thereof as is necessary be appropriated for the payment of the expenses of the delegates to the second meeting of the National Drug Trade Conference. Carried.

Motion No. 25—Election of members Nos. 155 to 175 inclusive. Carried.

Motion No. 26—To approve Suggested Program for 1913 Annual Meeting. Carried.

Motion No. 27—Election of Members Nos. 176-201 inclusive. Carried.

Motion No. 28—That the sum of \$2200.00, or so much thereof as is necessary, be appropriated for Volume 59 of the Proceedings and Report on the Progress of Pharmacy. Carried.

Motion No. 29—That fifty dollars be appropriated for Section on Commercial Interests.

Motion No. 30—Election of Members Nos. 202-234 inclusive. Carried.

Motion No. 31—That the sum of \$1000.00, or so much thereof as may be necessary, be appropriated for the Proceedings and Report on the Progress of Pharmacy in addition to that appropriated through Motion No. 28. Carried.

Motion No. 32—That the sum of \$125.00, or so much thereof as may be necessary, be appropriated to cover the expense of delegates in attendance upon the Drug Trade Conference, in addition to that appropriated by Motions Nos. 14 and 22. Carried.

Motion No. 33—Election of Members Nos. 235-278 inclusive. Carried.

William B. Day referred to the serious illness of Local Secretary James O. Burge and moved that a special committee be appointed to convey to Mr. Burge the sympathy and best wishes of the Association.

Motion seconded by Philip Asher and carried.

Chairman Eberle appointed as the committee: Messrs. Day, Main and Whelpley.

The report of the Committee on Publication was presented and the recommendations considered. It was as follows:

REPORT OF COMMITTEE ON PUBLICATION.

To the Members of the Council:

In accordance with the decision of the Boston (1911) Meeting of the Association, the JOURNAL of the Association has been issued monthly since January, 1912, 3000 copies having been printed each month.

The expenditures of the JOURNAL for 1912 were \$4503.14 plus the Editor's salary of \$1800 or \$6303.14. The estimated cost at the Boston (1911) Meeting was \$6500.00, no allowance being made for receipts from advertisements. The receipts from advertisements in 1912 were \$3655.42, making the net cost of the JOURNAL \$2647.72, or \$3852.28 less than the estimated cost.

It will be remembered that the Boston (1911) meeting of the Association decided to publish a yearly volume covering the work of the Report on the Progress of Pharmacy, as published in the former Proceedings; and it was decided, also, to publish the first volume "early in 1912," covering the period from June 30, 1910, to December 31, 1911, eighteen months. This book was to contain in addition to the Report, the Constitution and By-Laws, general rules, geographical roll and alphabetical list of members, list of officers and committees, etc., (as required by Chapter VII, Article IX of the By-laws).

But at the Denver (1912) Meeting of the Association the action of the Boston (1911) Meeting was reconsidered, and it was decided *not* to publish a Year Book, but to include the subject matter of the proposed book in the monthly JOURNAL.

It was decided, also, to clean-up the subject matter of the "Report on the Progress of Pharmacy" from June 30, 1910, to December 31, 1911, by the publication of an additional and final volume of the Proceedings (Volume 59, 1911); this has been done and the volume distributed free to the membership in June of this year. The title "Proceedings" is somewhat misleading, as the book does not refer to the proceedings of the Association, but it was felt to be the best title, under the circumstances.

The cost of the 1911 Proceedings including the salary (\$1200) of the Reporter on the Progress of Pharmacy was \$4262.54, relatively much more than the JOURNAL, even excluding the advertising receipts of the latter from consideration. The 1911 Proceedings has less than one-half the number of pages of the 1912 JOURNAL, and one-half the gross cost of the JOURNAL would amount to \$3150, or \$1100 less than the cost of the Proceedings. In addition, the

JOURNAL page holds nearly 50 percent more composition. This increased cost is due, firstly to the cost of binding (\$837), and the higher cost of express charges, etc., (\$502.94) over the cost of second class postage.

In other words, the cost of both the 1912 JOURNAL and the 1911 Proceedings was \$6911.75, including the salary of \$1800.00 paid the Editor of the JOURNAL, and the increase of \$450 salary paid the Reporter on the Progress of Pharmacy, authorized in 1911.

This brings up the question of the publication of a Year Book; the Denver, Nashville and New York Branches of the Association have each strongly advocated the issuance of the book, as have, also, individual members of the Association.

The cost of the Proceedings for 1908, 1909 and 1910 averaged \$7000 a year, and it is most important that we do not exceed such expenditure.

In the consideration of this question, it should be remembered that the 1911 Proceedings contained over 50 percent more reading pages than the Report on the Progress of Pharmacy of prior Proceedings. Thus in the 1908, 1909 and 1910 Proceedings the number of pages given over to the Report were, respectively, 441, 409 and 401, an average of 417 yearly. The number in the 1911 Proceedings was 670 or over 60 percent more. This was due to the fact that the 1911 Proceedings covered the period of 18 months, while prior ones covered only 12 months.

If the Year Book for 1912 and subsequent ones are made to contain only about 100 pages, the annual cost could be probably reduced to about \$2300, or \$1000 less than the cost of the 1911 issue.

Your Committee on Publication would therefore recommend:

1. That the Report on the Progress of Pharmacy be published annually as a separate volume, bearing the title—

YEAR BOOK OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

[With a list of Officers, Committees and Members and the Constitution and By-Laws of the Association.

The title could be abbreviated as "Year Book, A. Ph. A."

2. That the style of binding and size of page shall be the same as heretofore in vogue for the Proceedings and which has been adopted for the 1911 Report, condensed in a small separate volume, distinct in appearance from the JOURNAL and harmonizing with the Proceedings supplied for so many years. In view of the large number of pages of the bound JOURNAL it is hardly possible that any member will want to bind the JOURNAL and the Year Book into one volume.

3. The cost of expressage for the 1911 Proceedings was \$502.94. Sent as third class mail matter (the class for books) the cost would have been practically the same. If it were possible to mail the Year Book by parcel post, a savings of upwards of \$400.00 could be effected, each year, but this is contrary to the postal laws. The U. S. Government says, in effect, that you may mail printer's ink and paper separately by parcel post, but if you want to mail them together, as a printed book, you must send them by the higher third-class rates.

It seems to your Committee that this Association should vigorously protest to the Congress against this arbitrary and unfair discrimination against the mailage of printed books and request an amendment to the postal laws whereby books can be mailed at parcel post rates. It costs the government no more to transport and deliver a book than it does a can of ink and a bundle of paper.

The Report for 1912 is now in manuscript form, but cannot be arranged systematically until favorable action has been taken by the Association to continue the publication as separate volume; it should be in the hands of the printer on or before the middle of September, and can probably be printed, bound and distributed by January, 1914.

Owing to the unusual interruption and handicap caused by the duties of the Reporter on the Progress of Pharmacy in being, also, the Chairman of the Committee on National Formulary, Member of U. S. P. Committee of Revision, etc., the preparation of the abstracts for the Report of 1913 has not progressed as rapidly as is possible under normal conditions; but the manuscript can probably be finished and properly arranged for the printer on or be-

tore the middle of April, 1914, and there should be no difficulty in finishing the work so that the Year Book can be distributed early in July, 1914.

There is apparently no reason why, under normal conditions, future Year Books cannot be published and distributed by May 1 of each year.

We think it can be fairly said that the JOURNAL, with its 1466 pages of reading matter, has been successful beyond the hopes of its most sanguine advocates, not only in character and comprehensiveness of subject matter, and in stimulating the work of the Association, but also financially. The credit for these results belongs most largely to Editor James H. Beal, who has labored for the JOURNAL most ably and zealously; and now that it is an assured success, he should be given every aid and incentive in the further prosecution of his work.

The work of Professor C. Lewis Diehl our venerable Reporter on the Progress of Pharmacy, should be mentioned. His reports are "digests" in the best and truest sense of the word, and not products of scissors and paste pot. They are of the greatest service in research work and are deserving of the warmest praise.

The marked success of the JOURNAL emphasizes the imperative need of an "A. Ph. A. Home," in which the work of the Association can be systematically and efficiently handled. The Association will never exert that degree of influence it can and should have in the furtherance of the objects for which it stands until it has a home of its own. And it is urged that every member give this subject his earnest constructive thought, to the end that the way may be found to satisfactorily solve the problem.

The matter for the fourth edition of the National Formulary is not yet ready for publication, and even if it were, it seems to your Committee on Publication that the book should be issued coincidentally with the next revision of the U. S. Pharmacopœia, and become "official" from the same date. It should be made, also, of the same size, so that the two volumes could be bound together, if desired.

There is another question, one that belongs to both the Committee on Publication and the Committee on Revision of Constitution and By-Laws, but for convenience is presented here; the question of the annual dues and subscription. The annual dues of the members of the Association are three dollars and the subscription to the JOURNAL three dollars, or five dollars if both are paid at the same time.

We recommend that the Council modify the method of payment of dues and subscriptions now in vogue whereby the income of the Association may be best conserved.

We suggest that the Council extend an invitation to the American Conference of Pharmaceutical Faculties, and to the National Association of Boards of Pharmacy to publish their "annual reports" in the JOURNAL of our Association, and have reprints of the reports furnished them, under such conditions as may be mutually agreed upon. Such a course would furnish these reports promptly and conveniently for reference, and at a minimum cost.

Respectfully submitted,

August 18, 1913.

J. W. ENGLAND, Chairman.

Since this report was presented, John C. Wallace, Chairman of the National Drug Trade Conference, has reported to the Association that H. R. No. 1914, by Mr. Towner, to include books and pamphlets as entitled to parcel post rates, has been presented to the House of Representatives, Washington, D. C.

Recommendation No. I, that the Report on the Progress of Pharmacy be published annually as a separate volume, leaving the title "Year Book of the American Pharmaceutical Association," was adopted.

Recommendation No. II, referring to the style of binding and size of page of the Year Book, that it be of the same size as the past Proceedings, was adopted.

Recommendation No. III, that the Congress be requested to grant the privileges of parcel postage to printed books was adopted.

Philip Asher suggested the publication of a decennial index of the Report on the Progress of Pharmacy for 1903-1912, in 1914, but no action was taken by the Council.

On motion of H. M. Whelpley, seconded by W. R. White, it was decided to recommend that in Article II, Chapter VIII of By Laws the word "three" at end of second line be changed to "four." The amended paragraph will then read

"The subscription price for the JOURNAL of the Association shall be four dollars per annum to members and non-members alike." Carried.

On motion of H. M. Whelpley, seconded by J. W. England, it was moved that Article III, Chapter VIII be amended by changing the words "three dollar-" to "four dollars," making the amended article read: "Every member shall pay *in advance* to the Treasurer the sum of *four dollars* as annual dues, and by neglecting to pay said contribution for *six successive months*, may be dropped from the roll of members. If the annual dues (four dollars) and the annual subscription to the JOURNAL be paid at one and the same time, a reduction of three dollars shall be allowed." Carried.

Moved by J. H. Beal, seconded by W. R. White, that the Treasurer be authorized to receive the cooperation of the Secretaries of Local Branches in the collection of the annual dues of the members of the Association.

The report of the Committee on National Formulary containing a portion of the text of that work as revised was presented by Chairman C. Lewis Diehl.

On motion of J. H. Beal, seconded by T. F. Main, the report was received, and it was decided that, for copyright protection, copies of the report be *not* circulated, at present, except among the members of the Committee on National Formulary and the officers of the Association.

On motion of J. H. Beal, seconded by T. F. Main, it was moved that the addresses of the officers and others at the meetings of the Association and at the Sections, may be published in the pharmaceutical press, without waiting for prior publication in the JOURNAL. This does not include the publication of papers.

On motion of J. H. Beal, seconded by H. M. Whelpley, it was agreed that application be made for the copyright of the fourth edition of the National Formulary and that the General Secretary be authorized to make such application, on behalf of the Association.

J. H. Beal moved, seconded by T. F. Main, that the Council express its appreciation of the fifty years of membership and service given to the Association by C. Lewis Diehl, by a rising vote. Carried.

On motion of J. P. Remington, seconded by T. F. Main, it was directed that a message of congratulation be sent to Prof. Frederick Belding Power, of London, a member of the Association, upon his being awarded the Hanbury Medal.

A special committee was appointed to send the message, consisting of J. P. Remington, W. B. Day and T. F. Main.

Adjourned to meet Tuesday, August 19, 1913, at 9 a. m.

J. W. ENGLAND, Secretary.

(Fourth Session of the Council for 1912-13.)

The fourth session of the Council for 1912-13 was held on Tuesday, August 19, 1913, at 10 a. m.

Present: Messrs. Alpers, Main, Rusby, Beal, England, Pease, Clark, Godding, Packard, LaPierre, Whelpley, Teeters, Koch, and Lascoff.

The reading of the minutes of the third session of the Council was, on motion, dispensed with.

The report of the Committee on Recipe Book was presented and referred to the Section on Pharmacopoeias and Formularies.

A supplemental report of the Committee on Credentials was presented and referred to the House of Delegates.

Applicants for membership from Nos. 328 to 339, inclusive, were elected, as follows:

No. 328. D. Olin Woodworth, 122 West First St., Albany, Oregon, rec. by Jno. M. A. Lane and J. H. Beal.

No. 329. Robert Lotta Crown, 879 Madison Ave., Memphis, Tenn., rec. by F. W. Ward and Samuel C. Davis.

No. 330. William Cleveland Rollins, Madill, Okla., rec. by J. C. Barton and F. H. Hudelson.

No. 331. Joe Wharton Peyton, 500 Texas St., Shildport, La., rec. by E. A. Ruddiman and J. T. McGill.

No. 332. F. A. Mall, Belle Plaine, Iowa, rec. by E. O. Kagy and J. H. Beal.

No. 333. Thomas A. Chapman, care Highland Park Station, Des Moines, Iowa, rec. by F. O. Kagy and J. H. Beal.

No. 334. Mary E. Selzer, Menlo Park, California, rec. by Clarissa M. Roehr and J. H. Beal.

No. 335. Miss Anna Marie Farrell, Vacaville, Cal., rec. by Clarissa M. Roehr and J. H. Beal.

No. 336. Jennie Maguire White, 416 Hayes St., San Francisco, Cal., rec. by Clarissa M. Roehr and J. H. Beal.

No. 337. Robert Owen Brown, Cooper, Texas, rec. by R. H. Needham and R. H. Walker.

No. 338. Edward Peter Genocchio, Holder St., Redwood City, Cal., rec. by R. H. Needham and Albert Schneider.

No. 339. Maynard F. Belson, Lott, Texas, rec. by R. H. Needham and R. H. Walker.

The report of the General Secretary was read and referred to the general session of the Association.

The report of the Committee on Unofficial Standards was received, and referred to the Section on Pharmacopoeias and Formularies.

A recommendation of the committee for the same appropriation in 1914 as in 1913 was referred to the Committee on Finance.

It was moved by J. H. Beal and seconded by J. A. Koch that the sum of twenty-five dollars, or so much thereof as may be necessary, be appropriated for the expenses of the Women's Section. Approved by the Finance Committee. Carried.

The reports of the Treasurer and the Auditing Committee were received and referred to the general session of the Association.

Moved by J. H. Beal, seconded by H. M. Whelpley, that a Commission on Proprietary Medicines be created, as follows:

That there is hereby created a standing committee, consisting of five members elected by the Council, to be known as the Commission on Proprietary Medicines.

Of the Commission first elected, the members shall be elected for terms of one, two, three, four and five years respectively, and the vacancy annually occurring shall be filled by the election of a member for the term of five years. The Chairman of the Commission shall be annually designated by the Council, from the members of the Commission.

The duties of the Commission on Proprietary Medicines shall be:

1. To inquire into and to report to the Council from time to time upon the general subject of proprietary medicines in their relations to pharmacy, medicine and the public health.

2. To inquire whether any of the proprietary medicines commonly known as patent medicines, contain alcohol or habit-forming narcotic drugs in sufficient

amount to render them liable to create an alcohol or drug habit, or satisfy such habits when otherwise created.

3. To inquire whether, or to what extent, the commonly advertised patent medicines contain potent drugs in sufficient amount to render them dangerous in the hands of the laity.

4. To inquire into the extent to which patent medicines are fraudulently advertised, or differ in composition or origin from the claims made for them, or the extent to which they are advertised for the use of diseases for which no cure is known to medical science.

The Commission on Proprietary Medicines shall report progress annually to the Council, but no report or conclusion of the Commission shall be deemed as representing the views of the Association or Council until the same shall have been formally approved by the Association or Council. The Commission shall not make any expenditures of money, or create any debt against the Association in excess of such appropriations as may be made by the Council. Carried.

Adjourned to meet Wednesday, August 20, 1913, at 9 a. m.

J. W. ENGLAND, Secretary.

(Fifth Session of the Council for 1912-13.)

The fifth session of the Council for 1912-13 was held on Wednesday, August 20, 1913, at 10 a. m.

Present: Messrs. Clark, Teeters, Eldred, Eberle, Main, Beal, England, Pease, Diehl, Packard, LaPierre, Day, Alpers, Whelpley, Godding, Rusby, Havenhill, and Asher.

The reading of the minutes of the previous meeting was, on motion, dispensed with.

The report of the Committee on Membership, A. H. Clark, Chairman, was presented and accepted.

Applications for membership from Nos. 340 to 345, inclusive, were elected, as follows:

No. 340. George Harry Waltz, 1831 Moshier St., Baltimore, Md., rec. by H. A. B. Dunning and E. F. Kelly.

No. 341. Roy Ellis Tyler, 223 Washington Ave., Oil City, Pa., rec. by J. A. Koch and A. F. Judd.

No. 342. William Monroe Simpson, 2509 Beale Ave., Altoona, Pa., rec. by J. A. Koch and Albert F. Judd.

No. 343. Elisha Greene Morris, Jr., Athens, Ala., rec. by E. A. Ruddiman and H. M. Rhea.

No. 344. Robert Earl Covington, White House, Tenn., rec. by E. A. Ruddiman and H. M. Rhea.

No. 345. David P. Schindel, 45 S. Potomac St., Hagerstown, Md., rec. by J. W. England and H. A. B. Dunning.

Philip Asher moved, seconded by T. F. Main, that General Secretary Beal be authorized to secure the payment of certain delinquent accounts due the National Formulary by legal action, if necessary. Carried.

J. H. Beal, seconded by H. M. Whelpley, moved that Joseph P. Remington, Julius A. Koch and Albert Schneider be appointed delegates to attend the Third International Pharmaceutical Exhibition, to be held at Vienna, September 6-20, 1913.

A supplementary report of Committee on Credentials was presented and referred to the House of Delegates.

The report of Committee on Invested and Trust Funds was presented and accepted.

J. W. England moved, seconded by J. H. Beal, that the selling price of the Year Book (or Report on the Progress of Pharmacy) be made four dollars instead of three dollars, as at present. Agreed to.

J. H. Beal moved, seconded by W. C. Alpers, that the officers of the Scientific Section be authorized to select time for additional meetings that would not conflict with the other Sections. Carried.

J. H. Beal, seconded by Philip Asher, moved that the Chairman of the Council and two others of his selection, be made a Nominating Committee to report a list of nominees for the Commission on Proprietary Medicines to be voted upon by the Council.

Messrs. Eberle, Koch and Alpers were named as the committee.

Adjourned until Thursday, August 21, 1913.

J. W. ENGLAND, Secretary.

(Sixth Session of the Council for 1912-13.)

The sixth session of the Council for 1912-13 was held Thursday, August 21, 1913, at 9 a. m.

Present: Messrs. Clark, LaPierre, Godding, Koch, Alpers, Main, Pease, Teeters, Eberle, England, Asher, Whelpley, Day, Eldred, White, Good, and Packard.

The minutes of the previous meeting were adopted.

A supplementary report of the Committee on Credentials was presented and referred to the House of Delegates.

J. H. Beal recommended certain changes in the form of the credentials of delegates to the Association, and the issuance of an identification slip to each delegate. Agreed to.

T. F. Main suggested that the identification slips be printed on tinted paper, and be deposited by the delegates with the Secretary of the House of Delegates. Agreed to.

Applicants for membership Nos. 346 to 350, inclusive, were elected, as follows:

No. 346. A. W. Frame, care Merck & Co., Rahway, N. J., rec. by B. L. Murray and Frank R. Eldred.

No. 347. R. C. Summers, Columbus, Ky., rec. by J. W. England and J. H. Beal.

No. 348. Robert Lee Thompson, 1718 Broad St., Nashville, Tenn., rec. by Anna G. Bagley and J. H. Beal.

No. 349. Frank Amann, Portsmouth, Ohio, rec. by Anna G. Bagley and J. H. Beal.

No. 350. Earl Edward Goudy, Cleveland, Ohio, rec. by Lewis C. Hopp and J. H. Beal.

The report of Committee on Nominations of Commissioners on Proprietary Medicines was submitted; fifteen names were presented, five to be elected.

The election was then held, resulting in the election of John C. Wallace, Thos. F. Main, M. I. Wilbert, Chas. Caspari, Jr., and James H. Beal.

The Chairman of the Council was authorized to fill any vacancy that might occur.

Moved by W. B. Day, seconded by G. F. Payne, that a vote of thanks be

extended to the Welch Grape Juice Co. and to the Tampa Cuba Cigar Co. for the courtesies shown by them to the members of the Association at the Nashville meeting.

J. A. Koch, seconded by Philip Asher, moved that the traveling expenses of the General Secretary, in his work for the Association, and of the Secretary of the Council, be paid. Carried.

J. H. Beal moved, seconded by T. F. Main, that the General Secretary be authorized to secure proper publicity of the annual meetings of the Association and its Sections, etc., in the daily press.

H. M. Whelpley nominated, seconded by J. H. Beal, F. W. R. Perry as Local Secretary for 1913-14. He was elected.

Adjourned to meet Friday, August 22, 1913.

J. W. ENGLAND, Secretary.

(Seventh Session of the Council for 1912-13.)

The seventh session of the Council for 1912-13 was held Friday, August 22, 1913, at 10 a. m.

Present: Messrs. Beal, Asher, Pease, Teeters, LaPierre, Main, Eberle, Whelpley, England, Godding, Alpers, Burge, Eldred, Good, Day, and Packard.

The minutes of the previous meeting were read and approved.

Applicants for membership, Nos. 351 to 354, inclusive, were elected, as follows:

No. 351. Yandell Paul Wooten, Lebanon, Tenn., rec. by E. A. Ruddiman and C. C. Young.

No. 352. James Pinkney Stowe, 26 South Tryon St., Charlotte, N. C., rec. by E. V. Howell and E. V. Zoeller.

No. 353. Thos. Aubry Robinson, Main and Madison Sts., Memphis, Tenn., rec. by J. O. Burge and E. A. Ruddiman.

A letter from Mr. F. W. R. Perry was read, as follows:

"To the Council of the American Pharmaceutical Association:

GENTLEMEN—After mature deliberation, I have decided, on account of my physical condition, and for business reasons, that it is not best that I should accept the office of Local Secretary for the ensuing year. I highly appreciate the honor conferred upon me, and shall do all that is in my power to make your visit to Detroit the most profitable and enjoyable that the Association has ever experienced. Very respectfully yours,

"F. W. R. PERRY."

The declination was accepted.

J. H. Beal, seconded by H. M. Whelpley, moved that the length of terms of service of the members of the Commission on Proprietary Medicines be determined by lot, which was done, with the following results:

T. F. MAIN, 1-year term.

M. I. WILBERT, 3-year term.

J. H. BEAL, 2-year term.

J. C. WALLACE, 4-year term.

CHAS. CASPARI, JR., 5-year term.

J. H. Beal was elected Chairman of the Commission on Proprietary Medicines.

Frank R. Eldred, Chairman of the Section on Scientific Papers, stated that his Section, at its session on August 21, 1913, voted to change Section VI of By-Laws of the Scientific Section to read as follows:

"Section VI, Article 1—Meetings—At least three sessions of the Section shall be held at each annual meeting of the Association. Additional sessions may be held at any time during

the meeting when the officers of the Section may see fit, and by consent of the Council; provided, however, that these sessions be so arranged that they conflict as little as possible with sessions of other Sections, and that no session be held simultaneously with the final session of the Association."

The amendment was approved by the Council.

Mr. Eldred reported, also, that the Section on Scientific Papers, at its session on August 21, 1913, passed the following resolution:

"Resolved, That we recommend that the name of the "Committee on Drug Market" be changed to "The Committee on the Quality of Medicinal Products" and that the Committee be instructed to include in future reports the number of drugs examined as well as the number found to be below standard."

The change was approved by the Council.

Leonard A. Seltzer was elected Local Secretary for 1913-14.

J. H. Beal, seconded by J. M. Good, moved that a committee consisting of Autumn V. Pease, Charles Holzhauer and Harry B. Mason be appointed to consider and report upon a plan for increasing the interest of retail pharmacists in subjects relating to commercial pharmacy, represented by the Section on Commercial Interests.

Adjourned.

J. W. ENGLAND, Secretary.

FIRST MEETING OF THE COUNCIL FOR 1913-1914.

The first or organization meeting of the Council of the American Pharmaceutical Association for 1913-14 was held in the Assembly Room of the Hotel Hermitage, at Nashville, Tenn., on Friday, August 22, 1913, at 10:45 a. m.

Present: Messrs. Asher, Beal, LaPierre, Eberle, Whelpley, England, Burge, Beringer, Nitardy, Good, Day, Packard, Caspari, Caspari, Jr., and Godding.

The following officers were elected:

Chairman, Eugene G. Eberle.
 Vice Chairman, John G. Godding.
 Secretary, Joseph W. England.
 General Secretary, James H. Beal.
 Treasurer, Henry M. Whelpley.
 Reporter on the Progress of Pharmacy, C. Lewis Diehl.
 Editor of the Journal, James H. Beal.
 Historian, Caswell A. Mayo.

On motion of C. A. Mayo, seconded by Charles Caspari, Jr., Dr. Albert Brown Lyons, of Detroit, was elected Honorary President of the Association.

Adjourned to meet August 23, 1913, at 9 a. m.

J. W. ENGLAND, Secretary.

SECOND MEETING OF THE COUNCIL FOR 1913-1914.

The second meeting of the Council for 1913-14 was held on Saturday, August 23, 1913, at 9 a. m.

Present: Messrs. Eberle, Caspari, Jr., Richardson, White, Burge, Godding, Alpers, Whelpley, Beal, Good, Beringer, Diehl, England, Craig, Rushy, Nitardy, Caspari, LaPierre and Asher.

The minutes of the previous meeting were read and approved.

Applicants from Nos. 354 to 356 inclusive were elected as follows:

- No. 354. Henry Clay Shapard, Shelbyville, Tennessee, rec. by W. I. Gates and J. O. Burge.
No. 355. Lester N. Jackson, 10th Ave. and Jefferson St., Nashville, Tennessee, rec. by F. A. Ruddiman and William R. White.
No. 356. Frank Sevier Brown, National Soldiers' Home, Johnson City, Tennessee, rec. by William R. White and J. O. Burge.

The Secretary of the Council called attention to the fact that the membership of the Council now numbered about forty, a large increase over previous years. He felt that the body was in danger of becoming unduly large with the growth in new sections and branches.

J. H. Beal supported this view and suggested the desirability of having an Executive Committee of the Council for the prompter dispatch of business, especially between the annual meetings. He moved, seconded by H. M. Whelpley, that the proposed amendment to Article 11, Chapter X, offered at the third session (1912-13) of the Council, adding two members to the Council, be reconsidered, and not recommended for passage by the Association. Carried.

J. W. England urged the formation of an Executive Committee along the lines laid down in the Report of the Committee on Revision of the Constitution and By-Laws presented at the Denver (1912) meeting of the Association and ordered printed for this meeting. Article 11 of Chapter IV of this revision reads as follows:

"Article 11—Executive Committee. The Executive Committee shall consist of four members of the Council holding no office, to be elected annually by the Council, and the President, General Secretary, Treasurer, Chairman of the Council and Secretary of the Council. The General Secretary shall be the Chairman of the committee and the Secretary of the Council the Secretary.

The Executive Committee shall be the executive body of the Council and shall have the power to act for the Council in all matters referred to it by the Council. It shall report all actions to the Council. If deemed necessary, it may hold special meetings, at a convenient place, between the times of annual meetings.

The Executive Committee shall report to the Council the names of three places at which, in their judgment, it will be desirable for the Association to hold the next annual meeting, and the Council shall determine the time and place of such meeting."

Dr. H. M. Whelpley felt that this by-law hardly went far enough. The committee proposed was simply a committee of reference with power to act. It should be given greater authority.

After a full discussion of the subject by the members it was agreed that further consideration should be postponed until the next annual meeting.

J. W. England, as Chairman of the Committee on Publication, presented and endorsed the recommendations of the following letter from C. Herbert Packard: "To the Council, A. Ph. A.:

GENTLEMEN—Mention has been made of the intention to saddle another and a very large work upon our General Secretary. From my point of view I consider that most everything pertaining to the affairs of an Association pass through the hands of the Secretary.

I believe you all realize this and know something of the work of the Secretary of this large Association. Our General Secretary has all the work of the ordinary class—besides this, what does he give us? The advice, counsel and ability of the ablest in the land. He is an executive—a builder. Would you cripple this ability by details and work that another can do? Secretary Beal should have time for the greater work of making stronger and better our organization. He has the power within him and I believe would glory in the op-

portunity to put it in force. Gentlemen, we all know that Secretary Beal has sacrificed for the love he bears this Association—are we to continue to let him sacrifice to such an extent?

He has been re-elected—a thousand dollars or more should be added to his salary—the Council knows what to do in this respect.

At this time I should like to make a motion that Secretary Beal shall have an assistant, same to be selected by him and that an appropriation be made to pay the assistant—amount of said appropriation to be fixed by the Finance Committee. Very truly yours,

Nashville, August 22, 1913.

C. H. PACKARD."

On motion of J. W. England, seconded by W. B. Day, the Committee on Publication was authorized to employ an advertising solicitor and assistant to the Editor of the JOURNAL at a salary to be fixed by the Committee on Publication, subject to the approval of the Committee on Finance and the Council.

H. M. Whelpley moved, seconded by J. W. England, that the question of the increase of salary of the Editor of the JOURNAL be referred, favorably, to the Committee on Finance and the General Secretary, with power to act, the amount of increase to be determined by the Committee on Finance and the General Secretary.

On motion of H. M. Whelpley, seconded by J. W. England, Henry George Greenish, of London, Eng., one of the Editors of the British Pharmacopœia, now under revision, was elected an Honorary Member of the American Pharmaceutical Association.

"Professor Greenish," states the Chemist and Druggist (1911, 53), "has a place of his own in British pharmacy. As a microscopist, pharmacognocist and teacher he is best known abroad, and his name is attached to numerous publications on these subjects, including the text-book of materia medica and his work on the microscopy of food and drugs. But the fact should also be noted that the Professor has never lost touch with practical pharmacy, and the results of numerous investigations which he has directed have improved galenical processes and perfected preparations. These qualifications, combined with his literary experience and sound judgment, fit him peculiarly for the B. P. editorship."

The resolutions adopted by the House of Delegates and referred to the Council for action were presented. The number was 25. Of these, 22 were adopted,* with some amendments, two were tabled, and one disapproved.

With reference to the third resolution of those adopted, W. C. Alpers, seconded by J. M. Good, moved that a committee of three be appointed for the purpose of drafting a suitable certificate to be given to students of colleges of pharmacy meriting the prize membership. Agreed to.

W. B. Day, H. M. Whelpley and J. H. Beal were named as the committee.

In the original resolution from the House of Delegates upon the Harrison Bill, H. R. 6282, reference was made to dispensing physicians. On motion of J. H. Beal, seconded by J. C. Wallace, such reference was stricken out.

The resolutions of the House of Delegates as finally amended were then approved as a whole.

William R. White made the following statement:

"On behalf of the Nashville Industrial Bureau, I am authorized to offer to the American Pharmaceutical Association the right and title of either of the following tracts of land:

First. A lot situated on Wedgewood Avenue, about one-quarter mile from the Tennessee State Fair Grounds, within 100 feet of the tracks of the Louisville and Nashville Railroad

* See September JOURNAL, p. 1040.

and on the street car line leading to said Fair Grounds, about two miles south of the Public Square; said tract to consist of one-half acre or more, being a part of the four and one-half acre tract now owned by the Nashville Industrial Bureau, or

Second. A lot situated on North Third Avenue within 150 feet of the Louisville and Nashville Railroad, and in close proximity to the tracks of the Nashville and Chattanooga, and the Tennessee Central Railroads, one mile north of the public square, containing one-half acre,

Provided, the said American Pharmaceutical Association agrees to build an appropriate building on either of these lots that it may select, to be used as the Headquarters of the Association, Secretary and Editor, and in which it will operate laboratories for experimental purposes and keep the stock of supplies, etc."

On motion of H. M. Whelpley, seconded by J. M. Good, it was directed that the offer of the Industrial Bureau of Nashville be received and placed on record for future consideration, and that the thanks of the Association be sent to the Industrial Bureau for its offer.

The question of having a Section on Botany and Pharmacognosy was discussed. On motion of G. F. Payne, seconded by W. B. Day, action on the establishment of the Section was deferred.

Chairman Eberle presented nominations for the committees of the Council for 1913-14, as follows:

Committee on Unofficial Standards (for terms expiring):

Otto Raubenheimer, term expires 1917.

George D. Rosengarten, term expires 1917.

M. L. Wilbert, term expires 1917.

Francis Henm (to succeed C. E. Vanderkleed), term expires 1917.

Elmer E. Wyckoff (to succeed Thomas P. Cook, deceased), term expires 1917.

Committee on Transportation:

Thomas F. Main, Chairman, New York, N. Y.

C. A. Mayo, New York, N. Y.

H. M. Whelpley, St. Louis, Mo.

Charles G. Merrell, Cincinnati, Ohio.

L. A. Seltzer, Detroit, Mich.

Charles Caspari, Jr., Baltimore, Md.

Charles B. Whilden, San Francisco, Cal.

F. C. Godbold, New Orleans, La.

W. S. Elkins, Jr., Atlanta, Ga.

M. L. Bressler, Denver, Colo.

C. Herbert Packard, East Boston, Mass.

Lewis C. Hopp, Cleveland, Ohio.

Auditing Committee:

Otto F. Claus, Chairman.

F. W. Sultan.

F. C. Pauley.

Committee on Invested and Trust Funds

Charles Holzhauer.

H. M. Whelpley.

E. G. Eberle.

Committee on Finance:

J. A. Koch, Chairman.

Otto F. Claus.

E. H. LaPierre.

Committee on Publication:

J. W. England, Chairman.
 George M. Beringer.
 F. J. Wulling.
 E. Fullerton Cook.
 E. G. Eberle.

On motion of Hugh Craig, seconded by W. B. Day, the nominations as made were agreed to, and the Secretary of the Council was directed to cast a ballot for the nominees, which was done; and they were declared elected.

Adjourned sine die.

J. W. ENGLAND, Secretary.

PROCEEDINGS OF THE HOUSE OF DELEGATES OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Sixty-first Annual Meeting, Nashville, Tenn., August 18-23, 1913.

(First Session.)

The first session of the House of Delegates was called to order August 18, at 8:15 p. m., in the Auditorium of the Masonic Grand Lodge, Nashville, Tenn., by Chairman Wm. C. Anderson.

Owing to a misunderstanding in the filing of the credentials of the delegates, the members could not be seated or business transacted, and on motion the House of Delegates adjourned to meet August 19, at 7:30 p. m.

CLARISSA M. ROEHR, Secretary.

(Adjourned Session.)

The adjourned session of the House of Delegates was held August 19, at 7:30 p. m., in the Auditorium of the Masonic Grand Lodge, Chairman W. C. Anderson presiding.

Roll call of delegates was the first order of business. The following responded:

National Association of Manufacturers of Medicinal Products—Chas. W. Woodruff, J. Fred Windolph, Frank R. Eldred.
National Association of Retail Druggists—C. F. Nixon, Frank H. Freericks.
Alabama Pharmaceutical Association—L. C. Lewis.
Arkansas Pharmaceutical Association—John B. Bond.
Colorado Pharmaceutical Association—F. W. Nitardy.
Florida Pharmaceutical Association—E. Berger.
Illinois Pharmaceutical Association—C. H. Avery.
Indiana Pharmaceutical Association—J. N. Roe.
Kentucky Pharmaceutical Association—A. A. Brown.
Louisiana Pharmaceutical Association—Philip Asher.
Massachusetts Pharmaceutical Association—J. G. Godding, E. C. Marshall.
Mississippi Pharmaceutical Association—H. M. Faser.
New Jersey Pharmaceutical Association—G. M. Beringer.
New York Pharmaceutical Association—W. I. DuBois, C. A. Mayo.

- North Dakota Pharmaceutical Association*—W. P. Porterfield, Burt Finney
Oklahoma Pharmaceutical Association—F. H. Huddleston.
Pennsylvania Pharmaceutical Association—C. B. Lowe.
Texas Pharmaceutical Association—R. H. Needham.
Utah Pharmaceutical Association—John Culley.
Virginia Pharmaceutical Association—T. A. Miller.
Alumni Association Massachusetts College of Pharmacy—E. H. LaPierre.
Kings County Pharmaceutical Society and Brooklyn College of Pharmacy—
 W. C. Anderson.
Ohio Valley Druggists' Association—F. H. Fredericks.
Albany College of Pharmacy—Alfred B. Husted.
Buffalo College of Pharmacy—W. G. Gregory.
California College of Pharmacy—Miss C. M. Roehr.
Cincinnati College of Pharmacy—Chas. P. Fennel.
Cleveland School of Pharmacy—J. F. Woolsey.
Creighton College of Pharmacy—I. C. Arledge.
Department of Pharmacy, University of Maryland—Chas. Caspari, Jr.
Department of Pharmacy, Vanderbilt University—J. T. McGill.
George Washington University, Department of Pharmacy—W. S. Richardson.
Massachusetts College of Pharmacy—Theo. J. Bradley, Miss J. H. Summer.
Philadelphia College of Pharmacy—C. B. Lowe.
Pittsburgh College of Pharmacy—John C. Wallace.
Purdue University School of Pharmacy—C. B. Jordan.
University of Illinois School of Pharmacy—C. M. Snow.
Valparaiso University Department of Pharmacy—Geo. D. Timmons, Mason
 L. Weems.
St. Louis College of Pharmacy—Otto F. Claus.
School of Pharmacy, Medical College of Virginia—A. Bolenbaugh.
School of Pharmacy, University of Michigan—H. B. Mason.
Iowa Pharmaceutical Association—J. M. Lindly, W. J. Teeters, E. O. Kagy.
Women's Pharmaceutical Association, Pacific Coast—Mrs. M. E. Selzer.
California Pharmaceutical Association—Albert Schneider.
New York Branch A. Ph. A.—B. L. Murray, Hugh Craig.
South Dakota Pharmaceutical Association—H. Sasse, L. E. Highley.
New York Deutscher Apotheker Verein—H. Arny, O. Raubenheimer, H. Kantrowitz.
Alumni Association Philadelphia College of Pharmacy—A. W. Miller.

Moved by C. M. Snow, seconded by O. Raubenheimer, that the present officers be retained and that new officers be elected at the final session. Carried.

The following were appointed as a Committee on Resolutions:

- Hugh Craig, New York, Chairman.
 O. F. Claus, St. Louis.
 E. C. Marshall, Boston.
 L. C. Lewis, Alabama.
 L. A. Brown, Kentucky.

The next order of business was the roll call of delegations for reports, resolutions or communications.

Delegates from New York State Pharmaceutical Association presented the following resolutions:

1. The appointment of a committee to consider a plan whereby the revision of the U. S. P. will more effectually meet progress of pharmacy.
2. To bring about necessary legislation to provide a separate license for retail druggists for the sale of alcohol for medicinal and mechanical purposes.

Hugh Craig, delegate from the New York Branch, offered the following resolutions:

1. To provide an appropriate certificate to students meriting prize membership in the A. Ph. A.
2. To require methyl alcohol to be sold under a name differentiating it from ethyl alcohol.
3. To establish national headquarters for the A. Ph. A.
4. To provide needed reform in exemption of drugs dispensed by physicians.
5. To publish the Report on the Progress of Pharmacy in a separate bound volume.
6. To change the Women's Section to an auxiliary.

Albert Schneider, delegate from the California Pharmaceutical Association, offered a resolution that the House recommended that the A. Ph. A. go on record as approving the college graduation prerequisite to state board examinations.

F. T. Gordon offered a resolution recommending a suitable badge or pin to indicate membership in the A. Ph. A.

F. Nitardy, of the Colorado Pharmaceutical Association, offered a resolution that every effort be put forth to make the possession of the latest issues of the U. S. P. and N. F. compulsory.

The following resolutions were offered by J. H. Beal:

1. Relating to distinctive form, size, markings and color of tablets intended for external use.
2. Relating to revision of U. S. Patent and Trade Mark laws.
3. Relating to special limited tax on sale of alcohol.
4. Relating to minimum list of apparatus and utensils required for proper manufacturing and testing under processes given in U. S. P.
5. Endorsement of Harrison Bill, H. R. 6282.
6. Appreciation of valuable services of Hon. Francis Burton Harrison, Dr. Hamilton Wright, and of members of National Drug Trade Conference.
7. Recommending uniform state anti-narcotic laws.

Resolutions relating to the incorporation of synonyms in the Revised Edition of the Pharmacopœia and National Formulary, and to the standardization of Castile Soap were submitted by William L. B. Brittain, a delegate from the Ohio Pharmaceutical Association.

A resolution urging the passage of the Bacon-Hughes Bill, which will accord better treatment to the Hospital Corps of the Army and of the National Guard was sent by the Washington State Pharmaceutical Association.

All of the foregoing resolutions were referred to the Committee on Resolutions.

Motion made by F. H. Freericks, seconded by E. C. Marshall, that opportunity be given for any member interested in any particular resolution to appear before

the Committee when the resolutions were being discussed. This motion was amended by adding that notices of committee meetings be posted on the bulletin board. Carried.

Adjournment till August 22, 8 p. m.

(Second Session.)

The House was called to order by Chairman W. C. Anderson, August 22, 1913, at 8:30 p. m., in the Masonic Grand Lodge Hall Auditorium.

The amendment to Chapter VIII of the By-Laws so that election of officers will be No. 6 in the order of business, as follows:

1. Calling Roll of Delegates.
2. Appointment of Committee on Resolutions.
3. Reading of Communications.
4. Calling Roll of Delegates for reports, resolutions and communications, all of which shall be in writing.
5. Miscellaneous Business.
6. Election and Installation of Officers.
7. Adjournment.

Having been read at a previous session, the amendment was, on motion, adopted.

Hugh Craig presented the following report of the Committee on Resolutions. The resolutions were considered seriatim:

On motion, Resolutions I, II, III, IV, VI, VIII, X, XI, XII, XIII, XIV, XV, XVII, XX, XXII were recommended to the Council for adoption.

On motion of J. H. Beal, Resolution V was amended as follows:

Resolved, That the A. Ph. A. is unreservedly in favor of the professional education of pharmacists as represented by a course in a college of pharmacy recognized as standard in the American Conference of Pharmaceutical Faculties. Carried.

Resolution VII was amended to read: *Resolved*, That the establishment of permanent official headquarters for the A. Ph. A. is approved.

Resolution XI was deleted from the report.

Resolution XVI, the words "and designation" were inserted after "design."

Resolution XVIII was deleted from the report.

Resolution XIX, fourth line, was amended by changing "illicit" to "illegitimate."

Resolution XXI, omit beginning with "and that although" to "and that its purpose," etc.

Resolution XXII was recommended for adoption.

Resolution relating to the incorporation of synonyms in the revised editions of the U. S. P. and N. F. was read. On motion of Beringer, this resolution was referred to the Council with favorable recommendation.

Resolution relating to standardization of Castile Soap, recommended for adoption, and referred to Committee on U. S. P. of the A. Ph. A.

F. T. Gordon's resolution referred to House of Delegates from Historical Section. On motion, the House recommended that the delegates from the A.

Ph. A. to the Eleventh International Conference be instructed to move for the appointment of an International Committee on Pharmaceutical Nomenclature.

W. S. Richardson, of Washington, moved that the District of Columbia Retail Drug Association be invited to send representatives to the Drug Trades Conference to take part in the deliberations.

J. H. Beal stated that the privileges of the floor of the Conference were open to any organized body. J. C. Wallace spoke along similar lines.

J. H. Beal moved the adoption of the recommendations as a whole. Carried.

The following were nominated to serve as officers of the House of Delegates for 1913-1914, and, after election, were duly installed:

C. M. Snow, Chairman.

W. S. Richardson, First Vice Chairman.

Otto F. Claus, Second Vice Chairman.

Linwood A. Brown, Third Vice Chairman.

R. A. Kuever, Secretary.

A vote of thanks was given the retiring officers, after which the House of Delegates adjourned sine die.

CLARISSA M. ROEHR, Secretary.

DELEGATES ACCREDITED TO THE 61ST ANNUAL CONVENTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.*

Nashville, Tenn., August 18-23, 1913.

American Association of Food and Drug Officials—Chas. Caspari, Jr., Baltimore, Md.

American Medical Association, Section on Pharmacology and Therapeutics—Bernard Fantus, Chicago, Ill.; Wm. H. Witt, Nashville, Tenn.; Wm. D. Haggard, Nashville, Tenn.

National Association of Manufacturers of Medicinal Products—Charles M. Woodruff, Detroit, Mich.; J. Fred Windolph, Norwich, N. Y.; Frank R. Eldred, Indianapolis, Ind.

National Association of Boards of Pharmacy—R. H. Walker, Gonzales, Tex.; W. H. Rudder, Salem, Ind.; Frank Koss, Fremont, Neb.

National Association of Retail Druggists—C. F. Nixon, Leominster, Mass.; Frank H. Freericks, Cincinnati, O.; Samuel C. Davis, Nashville, Tenn.

National Wholesale Druggists' Association—Charles S. Martin, Nashville, Tenn.; W. D. Phillips, Nashville, Tenn.; D. C. Chapman, Knoxville, Tenn.

Public Health Service—M. I. Willbert, Washington, D. C.

National Association of Drug Clerks—George F. Payne, Atlanta, Ga.

Alabama Pharmaceutical Association—W. S. Vance, Gadsden, Ala.; L. C. Lewis, Tuskegee, Ala.; Carl Whorton, Gadsden, Ala.

Arkansas Pharmaceutical Association—John B. Bond, Sr., Little Rock, Ark.; F. K. Klein, Hot Springs, Ark.; W. L. Dewoody, Pine Bluff, Ark.

*Delegates whose credentials were approved by the Council.

California Pharmaceutical Association—Mrs. Fletcher Howard, Los Angeles, Cal.; Albert Schneider, San Francisco, Cal.

Colorado Pharmaceutical Association—F. W. Nitardy, Denver, Colo.

Connecticut Pharmaceutical Association—P. J. Garvin, Chas. A. Rapelye, A. E. Lathrop.

Delaware Pharmaceutical Association—Herbert K. Watson, Holly Oak, Del.

District of Columbia Retail Druggists' Association—W. S. Richardson, Washington, D. C.

Florida Pharmaceutical Association—E. Berger, Tampa, Fla.; W. O. Richtmann, Satsuma Heights, Fla.; W. D. Jones, Jacksonville, Fla.

Georgia Pharmaceutical Association—George D. Case, Milledgeville, Ga.; Ben. S. Persons, Macon, Ga.; J. B. George, Gainesville, Ga.

Idaho Pharmaceutical Association—J. J. Buchler, Pocatella, Idaho; Chas. L. Joy.

Illinois Pharmaceutical Association—C. H. Avery, Chicago, Ill.; L. C. Deck, Girard, Ill.; J. C. Wheateroft, Grayville, Ill.

Indiana Pharmaceutical Association—F. W. Meissner, LaPorte, Ind.; J. Newton Roe, Valparaiso, Ind.; C. B. Jordan, Lafayette, Ind.

Iowa Pharmaceutical Association—J. M. Lindly, Winfield, Ia.; W. J. Teeters, Iowa City, Ia.; E. O. Kagy, Des Moines, Ia.

Kansas Pharmaceutical Association—L. D. Havenhill, Lawrence, Kan.; Matthias Noll, Atchison, Kan.; W. E. Sherrieff, Ellsworth, Kan.

Kentucky Pharmaceutical Association—C. Lewis Diehl, Louisville, Ky.; L. A. Brown, Lexington, Ky.; G. Orville Patterson, Hawesville, Ky.

Louisiana Pharmaceutical Association—Philip Asher, New Orleans, La.; L. E. Carruth, Peter Rupp. *Alternates*—P. A. Capdau, N. Caire.

Maine Pharmaceutical Association—Edward W. Murphy, Portland Me.; Frank H. Tupper, Bangor, Me.; Chas. H. Davis, Bangor, Me.

Maryland Pharmaceutical Association—J. F. Hancock, Baltimore, Md.; H. L. Meredith, Hagerstown, Md.; H. A. B. Dunning, Baltimore, Md.

Massachusetts Pharmaceutical Association—John G. Godding, Boston, Mass.; Ernest C. Marshall, Boston, Mass.

Minnesota Pharmaceutical Association—Justin S. Brewer, Minneapolis, Minn.; Frederick A. Upsher Smith, St. Paul, Minn.; Gustave Bachman, Minneapolis, Minn.

Mississippi Pharmaceutical Association—H. M. Faser, University, Miss.; H. F. West, Natchez, Miss.

Missouri Pharmaceutical Association—William Mittelbach, Boonville, Mo.; C. E. Zinn, Kansas City, Mo.; H. M. Whelpley, St. Louis, Mo.

Nebraska Pharmaceutical Association—A. V. Pease, Fairbury, Neb.; Frank Koss, Fremont, Neb.; Edw. Bexten, Omaha, Neb.

New Hampshire Pharmaceutical Association—Ben O. Aldrich, Keene, N. H.; C. W. Bass, Portsmouth, N. H.; A. F. Precourt, Manchester, N. H.; Thos. H. McGrail, Dover, N. H.

New Jersey Pharmaceutical Association—George M. Beringer, Camden, N. J.; C. Holzhauer, Newark, N. J.; G. M. Andrews, Woodstown, N. J.

New York Pharmaceutical Association—Wm. L. DuBois, Catskill, N. Y.; Caswell A. Mayo, New York, N. Y.; W. G. Gregory, Buffalo, N. Y.

North Dakota Pharmaceutical Association—W. P. Porterfield, Fargo, N. D.; Burt Finney, Bismarck, N. D.

Ohio Pharmaceutical Association—Geo. B. Kauffman, Columbus, O.; L. W. Funk; Azor Thurston, Grand Rapids, O. *Alternates*—W. L. B. Brittain, Norwood; H. W. Miller.

Oklahoma Pharmaceutical Association—Chas. A. Dow, Pond Creek, Okla.; W. Scott Samuels, Pawhuska, Okla.; F. H. Huddleston, Weatherford, Okla.

Oregon Pharmaceutical Association—D. O. Woodworth, Albany, Ore.; Miss Kitty W. Harbord, Salem, Ore.

Pennsylvania Pharmaceutical Association—Louis Emanuel, Pittsburgh, Pa.; Martin I. Wilbert, Washington, D. C.; C. B. Lowe, Philadelphia, Pa.; John C. Wallace, New Castle, Pa.; Charles H. LaWall, Philadelphia, Pa.

Rhode Island Pharmaceutical Association—James O'Hare, Providence, R. I.; George S. Morgan, Pawtucket, R. I.

South Carolina Pharmaceutical Association—A. A. Coleman, J. N. Littlejohn, C. H. McMurray.

South Dakota Pharmaceutical Association—Henry Sasse, L. E. Highley.

Tennessee Pharmaceutical Association—D. J. Kuhn, Nashville, Tenn.; W. R. White, Nashville, Tenn.; M. E. Hutton, Nashville, Tenn.

Texas Pharmaceutical Association—R. H. Walker, Gonzales, Texas; E. G. Eberle, Dallas, Texas; R. H. Needham, Fort Worth, Texas.

Utah Pharmaceutical Association—John Culley, Ogden, Utah.

Vermont Pharmaceutical Association—A. B. Anderson, Swanton, Vt.; Mason G. Beebe, Burlington, Vt.

Virginia Pharmaceutical Association—T. A. Miller, Richmond, Va.; G. T. Mankin, Falls Church, Va.; H. S. Eley, Suffolk, Va.

Washington Pharmaceutical Association—C. Osseward, Seattle, Wash.; Chas. W. Johnson, Seattle, Wash.; A. F. Maxwell, Spokane, Wash.

West Virginia Pharmaceutical Association—Alfred Walker, Sutton, W. Va.; W. W. Irwin, Wheeling, W. Va.; J. A. Tierney, Glenville, W. Va.

Wisconsin Pharmaceutical Association—Edward Kremers, Madison, Wis.; O. J. S. Boberg, Eau Claire, Wis.

Albany College of Pharmacy—Albert B. Husted, Garrett V. Dillenback, William A. Larkin.

Atlanta College of Pharmacy—Geo. F. Payne.

Brooklyn College of Pharmacy—See Kings County Pharmaceutical Society.

Buffalo College of Pharmacy—Willis G. Gregory.

California College of Pharmacy—Miss Clarissa May Roehr.

Cincinnati College of Pharmacy—Chas. P. Fennel, F. T. Kotte, Chas. Harding.

Cleveland School of Pharmacy—J. F. Woolsey, Joseph Albrecht, W. M. Fox.

College of Pharmacy of the City of New York—Henry H. Rusby, Geo. C. Diekman, Harry V. Army.

College of Pharmacy, Ohio Northern University—Albert Edwin Smith.

Creighton College of Pharmacy—I. Curtis Arledge.

College of Pharmacy of the State University of Iowa—Wilber J. Teeters, R. A. Kuever, Zada M. Cooper.

Department of Pharmacy, University of Maryland—Henry P. Hynson, Daniel Base, Chas. Caspari, Jr.

Department of Pharmacy, Vanderbilt University—J. T. McGill, E. A. Rudiman, W. R. White.

George Washington University Department of Pharmacy—Henry E. Kalusowski, Willard S. Richardson, Lewis Flemer.

Louisville College of Pharmacy—John G. Krul, Curt Krieger, John D. Jansing.
Massachusetts College of Pharmacy—C. Herbert Packard, Theodore J. Bradley, Jennie H. Sumner.

New Orleans College of Pharmacy—M. T. Breslin, Philip Asher, Geo. D. Feldner.

Northwestern University School of Pharmacy—John H. Long, Harry M. Gordin, Chas. W. Patterson.

Ohio State University College of Pharmacy—Geo. B. Kauffman, Clair A. Dye, Edward Spease.

Philadelphia College of Pharmacy—Joseph P. Remington, C. B. Lowe, E. Fullerton Cook.

Pittsburgh College of Pharmacy—John C. Wallace, J. H. Beal, J. A. Koch.

Purdue University School of Pharmacy—C. B. Jordan, A. H. Dewey, W. F. Gidley.

School of Pharmacy, Medical College of Virginia—A. Bolenbaugh, W. F. Ridd.

School of Pharmacy, Medical Department, Texas Christian University—R. H. Needham, M. E. Gilmore, E. P. Genochio.

School of Pharmacy, Medical Department, University of Texas—M. V. Creagan, John D. Covert, W. S. Parks.

School of Pharmacy, University of Kansas—L. D. Havenhill, Chas. Sterling, M. M. Noll.

School of Pharmacy, University of Michigan—Leonard A. Seltzer, W. H. Blome, H. B. Mason.

St. Louis College of Pharmacy—James M. Good, Charles E. Caspari, Otto F. Claus.

University of Colorado School of Pharmacy—Homer C. Washburn.

University of Illinois School of Pharmacy—W. B. Day, A. H. Clark, C. M. Snow.

University of Nebraska School of Pharmacy—Rufus A. Lyman.

Valparaiso University, Department of Pharmacy—George D. Timmons, Arthur W. Linton, Mason L. Weems.

Alumni Association Massachusetts College of Pharmacy—John G. Godding, Elie H. La Pierre, Charles A. Gilbert.

Alumni Association Philadelphia College of Pharmacy—E. F. Cook, F. P. Stroup, A. W. Miller.

District of Columbia Retail Druggists' Association—W. S. Richardson.

King's County Pharmaceutical Society and Brooklyn College of Pharmacy—W. C. Anderson, Henry W. Schimpf, Joseph Kahn.

New York Branch A. Ph. A.—B. L. Murray, Hugh Craig, W. C. Alpers.
New York County Pharmaceutical Society—J. L. Lascoff, Otto Raubenheimer.
New Yorker Deutscher Apotheker-Verein—H. V. Arny, Otto Raubenheimer,
 Hugo Kantrowitz.
Ohio Valley Druggists' Association—Frank H. Freericks.
Women's Pharmaceutical Association of the Pacific Coast—Mrs. M. E. Selzer,
 Miss Anna Farrell.

REGISTER OF PERSONS IN ATTENDANCE AT THE SIXTY-FIRST ANNUAL CONVENTION OF THE AMERICAN PHARMA- CEUTICAL ASSOCIATION.*

NASHVILLE, TENN., Aug. 18-23, 1913.

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|--|---|
| 1 J. O. Burge.....Nashville | 40 E. Berger.....Tampa, Fla. |
| 2 E. A. Ruddiman.....Nashville | 41 Mrs. E. Berger.....Tampa, Fla. |
| 3 Wm. White.....Nashville | 42 L. D. Brunk.....Nowata, Okla. |
| 4 C. C. Young.....Nashville | 43 Mrs. L. D. Brunk.....Nowata, Okla. |
| 5 Ira B. Clark.....Nashville | 44 John D. Humphrey.....Bristow, Okla. |
| 6 M. E. Hutton.....Nashville | 45 Mrs. John D. Humphrey.....Bristow, Okla. |
| 7 J. B. Sands.....Nashville | 46 W. L. Dubois.....Catskill, N. Y. |
| 8 R. W. Vickers.....Murfreesboro | 47 Miss Charlotte I. Dubois.....Catskill, N. Y. |
| 9 Mrs. R. L. Thompson.....Nashville | 48 W. I. Gates.....Whiteville, Tenn. |
| 10 S. C. Davis.....Nashville | 49 F. E. Stewart.....Philadelphia, Pa. |
| 11 John B. Bond, Sr.....Little Rock | 50 F. W. Nitardy.....Denver, Colo. |
| 12 P. H. Warren.....Clarksville, Ark. | 51 L. F. Kebler.....Washington, D. C. |
| 13 W. L. Dewoody.....Pine Bluff, Ark. | 52 V. L. Kebler.....Washington, D. C. |
| 14 F. W. Ward.....Memphis | 53 W. J. Teeters.....Iowa City, Ia. |
| 15 R. H. Needham.....Ft. Worth, Tex. | 54 John Cully.....Ogden, Utah |
| 16 H. V. Arny.....New York | 55 Mrs. John Cully.....Ogden, Utah |
| 17 M. I. Wilbert.....Washington | 56 J. H. Beal.....Scio, O. |
| 18 R. H. Walker.....Gonzales, Tex. | 57 William Mansfield.....New York |
| 19 E. G. Eberle.....Dallas, Tex. | 58 J. M. Rogoff.....Cleveland, O. |
| 20 T. Curtis Arledge.....Omaha, Neb. | 59 L. A. Seltzer.....Detroit, Mich. |
| 21 Frank Moerk.....Philadelphia | 60 O. J. Nance.....Jackson, Tenn. |
| 22 George M. Beringer.....Camden, N. J. | 61 E. A. Gilliland.....Nashville |
| 23 Mrs. G. M. Beringer.....Camden, N. J. | 62 Linwood A. Brown.....Lexington, Ky. |
| 24 John G. Godding.....Boston | 63 Francis E. Bibbins.....Indianapolis |
| 25 Mrs. John G. Godding.....Boston | 64 J. L. Lascoff.....New York City |
| 26 C. H. Packard.....Boston | 65 Claude E. Tilton.....Fairmont, Ill. |
| 27 Elie H. La Pierre.....Boston | 66 J. V. Waldsum.....Nashville |
| 28 Mrs. Elie H. La Pierre.....Boston | 67 J. C. Burton.....Stroud, Okla. |
| 29 Jennie H. Summer.....Boston | 68 W. C. Rollins.....Madill, Okla. |
| 30 L. E. Highley.....Hot Springs, S. D. | 69 J. W. England.....Philadelphia, Pa. |
| 31 Mrs. L. E. Highley.....Hot Springs, S. D. | 70 Bernard Fantus, M. D.....Chicago |
| 32 H. A. Sasse.....Hewey, S. D. | 71 B. L. Murray.....Rahway, N. J. |
| 33 L. D. Havenhill.....Lawrence, Kan. | 72 W. L. Swallows.....Algood, Tenn. |
| 34 Adolph Zieffe.....Fargo, N. D. | 73 W. B. Day.....Chicago |
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 238 Chas. B. Thompson.....Nashville
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 279 Mrs. W. D. Young.....Pueblo, Colo.
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 286 A. Bolenbaugh.....Richmond, Va.
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 294 James S. Patrick.....Nashville
 295 Andrew J. Marlin.....Nashville
 296 Mose Cook.....Nashville
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 298 Boyd Weatherford.....Nashville
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Section on Scientific Papers

Papers Presented at the Sixty-First Annual Convention

COCA—"THE DIVINE PLANT OF THE INCAS."*

JOHN URI LLOYD.

History.—*Erythroxylon coca* is a small tree or bush native to the slopes of the Andes (see p. 1247), where, especially in Bolivia, large plantations are cultivated. The leaves have been highly valued, from the earliest records, by the natives of Peru, Chili, Colombia, and Bolivia, the tree being called "The Divine Plant of the Incas." In 1569, Monardes¹, of Seville, published an article on the drug, reproduced, 1577, in London. (Dowdeswell².) This is among the first references to the drug in print, known to us, and it was followed by the botanical description, by Clusius³, in 1605.

The history of Coca, in its many phases, is presented by several travelers and authors, one of the first of these to introduce it to Europeans being W. J. Hooker⁴, in his "Companion to the Botanical Magazine," London, 1835. Several pages of this work are devoted to the South American uses of Coca, the same being credited to Dr. Poeppig's "Reise in Chile, Peru, und auf dem Amazonenstrom." From this historical contribution we present (see p. 1243) portions pertinent to the Coca subject.

Among the most interesting of the more recent publications treating of Coca is a large illustrated volume of near 600 pages, by W. Golden Mortimer, M. D., under the title, "Peru, History of Coca," New York, 1901. From this work we also gain much insight into the early history and customs of the Coca users, as indicated by the passages that follow.

That Coca was honored in their sacred ceremonies by the natives of the lands producing it, is evidenced by the following "recital"⁵ addressed to the sovereign:

Oh, mighty lord, son of the Sun and of the Incas, thy fathers, thou who knoweth of the bounties which have been granted thy people, let me recall the blessings of the divine Coca which thy privileged subjects are permitted to enjoy through thy progenitors, the sun, the moon, the earth, and the boundless hills.

A plant so regarded necessarily fell under the adverse criticism of the devoutly religious, early Spanish explorers, who naturally directed their efforts against everything that, in their opinion, constituted a part of heathen worship and diverted the natives from the true God. This is shown by the following quotation from Mortimer:

In 1569 the Spanish audience at Lima, composed of bishops from all parts of South America, denounced Coca because, as they asserted, it was a pernicious leaf, the chewing

*Part of this historical record is from a paper first published in the Practical Druggist and Pharmaceutical Review of Reviews, October, 1910. Republished in Lloyd Library Bulletin, No. 18, "History of the Vegetable Drugs of the Pharmacopœia of the United States," by John Uri Lloyd, 1911.

of which the Indians supposed gave them strength, and was hence *Un delus, del demonio*."

In this connection the following quotation will indicate how distasteful are the methods of the natives, even yet, to those whose first duty consists in suppressing such ceremonies as are therein described:

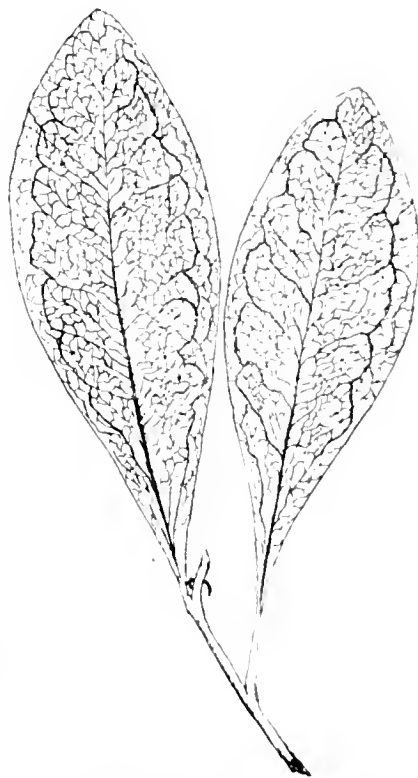
When the period for departure on a dangerous journey, i. e. actually arrives, the Indians throw Coca in the air, just as did the Incan priests of old to propitiate the gods of the mountains, who, presumably, do not wish their domains invaded.

The native Indian use of Coca was unquestionably exhibited where it was necessary for men to make the most exhausting physical effort, as the Indian "runners" of the Andes, carrying with them a modicum of food or other burdens. A few coca leaves sufficed as a hunger pacifier, and upon this as a basis the runners underwent the most exhausting and exacting journeys. It was accepted by observing travelers that the leaves being chewed, would yield an abundance of "vital strength." The endurance of people thus employing the drug is noted also by the Jesuit Father Blas Valera⁶ under the name *Cuca*. After observing the methods of the Jesuit explorers, he writes as follows:

It may be gathered how powerful the *Cuca* is in its effect on the laborer, from the fact that the Indians who use it become stronger and much more satisfied, and work all day without eating.

In further support of this phase of the Coca subject, Dr. Poeppig, in the beginning of the last century, records as follows, in his work on Chili and Peru:

The miner will perform, for twelve long hours, the formidably heavy work of the mine, and, sometimes, even doubles that period without taking any further sustenance than a handful of parched maize, but every three hours he makes a pause for the purpose of chewing Coca (*coquear*.) He would work ill and reluctantly if the proprietor let him want his favorite herb. * * * The same holds good with the Indian, who, as a porter, messenger, or vender of his own productions, traverses the Andes on foot. Merely chewing Coca from time to time, he travels with a load weighing one hundredweight, on his back, over indescribably rough roads, and accomplishes frequently ten leagues in eight hours. During the Revolutionary War the undisciplined patriot troops, chiefly consisting of Indians from the Sierra, by dint of ample supplies of Coca and brandy, traversed long distances in a very short time, and thus became very dangerous to the Spaniards. Where Europeans would have halted and bivouacked, the ill-clad, barefooted Indians merely paused, for a short interval, to chew their Coca.—From the "*Reise in Chile, Peru*," etc., of Dr. Poeppig. *Companion to the Botanical Magazine*, by W. J. Hooker.



Erythroxylon Coca, natural size. Pen drawing by Miss Eda Van Guelpen.

These reviews and descriptions, showing conditions in times gone by and

the trail followed a very meandering course through the mountains, to the little town of San Sebastian. From this town we started the ten days' journey across the Central Range to the village of St. Augustin, the uppermost town in the great mountain enclosed valley of the Magdalena River, which heads in two small lakes and flows between the Eastern and the Central Ranges of the Andes to the Caribbean Sea.

During the five days of this trip, which included the crossing of the "Paramo," as the part of the mountains lying above timber line is called, our cargoes (packs) were carried on the backs of Indian porters, the trail being impassable to loaded mules. From St. Augustin we went down the valley of the Magdalena River to the Caribbean Sea, where we left Colombia.

The People.—The inhabitants of Colombia, as we met them, were whites, blacks, and Indians, as well as mixtures of the three races in all conceivable degrees. On the Pacific Coast, where we entered the country, the inhabitants, excepting two or three foreigners, were all Negroes, who showed little sign of other blood in their veins. After commencing the ascent of the Western Range, we saw evidence of some white, and occasionally a small amount of Indian blood in the population, but on both slopes and up the flat, fertile part of the Cauca Valley to the lomas or foothills of the Central Range, the Negro element predominated. After entering the lomas the Negro blood soon disappeared, being replaced by a mixture of white and Indian, the white element usually dominating. This condition continued as far as San Sebastian, although in the vicinity of Popayon and beyond a large number of pure-blood Indians were encountered on the trail. These Indians live in secluded mountain homes, difficult of access and away from the main trail. After leaving San Sebastian the only people seen on the trail were of pure Indian descent, until we reached St. Augustin, on the eastern slope of the Central Range where white blood again began to be in evidence, mixed with the Indian. In the Magdalena Valley, beyond St. Augustin, the Indian blood was diluted with a constantly increasing amount of white blood, until finally, even before reaching the town of Neiva, the white blood predominated, sometimes excluding all evidence of Indian ancestry. In the vicinity of Neiva, Negro blood again appeared, and below this point on the Magdalena River, very shortly overshadowed all evidence of other than African origin. In the coast towns of the Caribbean Sea, however, there are many Europeans and Americans.

Coca and Coca Users.—In the Negro country of the Western Coast, and as far up the Cauca Valley as the lomas, as well as in the lomas themselves, where a fair amount of white blood prevailed, we saw no evidence of coca using. The habit was first observed by us in the vicinity of Popayon, among the full-blooded Indians traveling on the trail. Here the way was marked by blotches of saliva, much like the tobacco "ambier" of primitive Kentucky. The Indians here were rather short in stature, but well built and very muscular. Their color was dark, decidedly red when wet, and their teeth and lips were deep-stained with Coca. In physical appearance they were by far the best specimens we had seen in Colombia, up to this time. With heavy loads on their back, of market stuffs in woven bags, men and women walked very rapidly, or even ran for long distances along the



Fig. 2.

Indian Pack Carriers of the Andes (see also Figs. 3 and 4). Coca bag shown at the side of each. Cheeks puffed with Coca. (See also Fig. 10.)



Fig. 3.

Indian Pack Carriers of the Andes. (See also Figs. 2 and 4.)



Fig. 4.

Indian Pack Carriers of the Andes on the "Paramo" (Summit of the Andes.) (See also Figs. 2 and 3.)



Fig. 5.

Indian Woman, showing "Guambi" or Coca Bag.

trail, showing no signs of fatigue from their exertion. (Figs. 2, 3, and 4.) The cheeks of all bulged with the leaves of Coca. (Fig. 2, left hand figure, and Fig 10.) At their side they carried their supply of the drug in small, close-woven fiber bags (Fig. 9) of about a quart capacity, but these were seldom more than a third filled. (Shown in Figs. 2, 4, 5, and 9.)

Coca Market. About noon of the day on which we first saw coca in use by the Indians on the trail, we reached the town of Popayon. It being Friday, the principal market day of the week, we found all kinds of foodstuffs for sale, but the leaves of coca far exceeded in importance any other item, even the necessities of life. The leaves were contained in large, native, woven bags and were sold by weight from rude balances, the pans of which were gourd shells, and the weights, stones (Figs. 6 and 7). A few of the market people offered lime for sale, which was weighed in the same crude manner as the coca leaves.

Here, in the Popayon market, we first became familiar with the manner in which the Indians use the coca leaves. At their sides all wore the small, woven bags, called "Guambis" (Figs. 2, 4, 5, and 9), a name that applies also to the large bags in which the Indians carry their packs. In the coca guambi the dry leaves (fresh leaves being never used) are carried loose (Fig. 8), together with a small gourd (called "mombero"), pierced at the stem end by a round hole (AA, Fig. 9), and corked with a plug of wood (B, Fig. 9). In the gourd is a small amount of lime, called "mombi" by the Indians. This is ground to powder, or carried in small lumps. Invariably the coca user, immediately after putting the leaves in his mouth, mixes them with lime.

Between Popayon and the ridge of the Central Range of the Andes we visited, during market days, the towns of La Sierra and Almaguer. In each of these places we saw coca sold and used in the same manner as in Popayon.

Method of Using Coca.—The Indians first fill the mouth with the dried (never green) leaves (Fig. 10), and then pour from the gourd into the palm of the hand a small amount of lime, perhaps the bulk of two or three peas. This is then mixed in the mouth with the leaves, the whole lump being then pushed by the tongue, without mastication, into one cheek, until that side of the face fairly bulges (Fig. 10, also Fig. 2). The leaves are not chewed, but occasionally the wad is turned by the tongue. From time to time more lime is added, but a single mouthful of the leaves lasts several hours.

Distribution of the Coca Shrub.—In the mountainous district between Popayon and San Sebastian could be seen, in the door-yard of almost every house, a small patch of coca bushes, which not only occupied the choicest parts of the garden sites, but also showed signs of much more care and cultivation than was given the other garden crops. After our attention was called to the coca bushes, we recalled having seen them cultivated in the vicinity of Cali, where they grow in far greater luxuriance than in the higher altitudes. In the upper ranges, above the highest altitude at which the coca plant will grow, we learned that the leaves used are all obtained from the lower country, around Cali, where the drug is of far better quality than that grown at high altitudes in the mountains. In the region of Cali (3300 feet) the plant exceeds ten to twelve feet in height, but decreases in luxuriance as the mountains are ascended until, at 8000 to 9000 feet, it becomes a mere shrub of two or three feet. At an altitude of 10,000 feet it



Fig. 6.



Fig. 7.

Coca Dealers in Market at Popayon.



Fig. 8.

Broken Coca Leaves as carried in "Guambi."
(See Fig. 9.)



Fig. 9.

Coca Bags ("Guambi") with Lime Gourds (A, A) and Stopper (B).

disappeared altogether. Although the coca raised around Cali is of the best quality, the inhabitants of that town do not use it, and during our daily visits to the Cali market we did not see the drug offered for sale.

Coca Considered Indispensable to Indian Pack Carriers.—After leaving the small town of San Sebastian, we ascended rapidly to the high valley (altitude about 10,000 feet), called La Valle de Papas (the Valley of Potatoes). Here we lived about two weeks in the family of an old Indian named Don Pedro, where observation of the habits of our hosts gave us ample opportunity to observe how highly the Indians prize the coca leaves in their home life. On one occasion, when starting with Don Pedro as a guide to a distant lake at a much higher altitude, he told us that unless we used the drug we would be unable to withstand the fatigue of the journey, which would be exceptionally severe. To test the virtues of coca, as well as to quiet his fears, we filled our mouths with the leaves, which were almost tasteless, and as our guide assured us, without value until lime was added. But the addition of the lime rendered the mixture so disagreeable that, to Pedro's disgust, we spat it out and decided to forego the possible benefits of its use.

The Paramo.—Having left La Valle de Papas, we started across the Paramo, as the lofty summit of the Andes above the timber line is called. On this trip the dozen Indian porters who carried our cargoes all consumed coca unceasingly while on the march. After eating a simple breakfast of ground corn porridge ("mazamora"), they would start



Fig. 10.

Showing Coca user's cheek puffed out with the leaves. (See also Fig. 2.)

with their heavy packs, weighing from seventy-five to more than a hundred pounds, strapped to their backs (see Figs. 2, 3, and 4). All day long they traveled at a rapid gait, over steep mountain spurs and across mucky swamps at an altitude that, to us, without any load whatever, was most exhausting. On these trips the Indians neither rested anywhere nor ate at noon, but incessantly sucked their wads of coca throughout the entire day. At night they ate a heavy meal of either "mazamora" or rice, sometimes with a little "panela" (brown sugar) dissolved in hot water. Meat they seldom, if ever, tasted. Then they lay down on the cold, bare ground in a half-open shed (Fig. 11), with little cover, awakening at daybreak to eat their breakfast and start again on a long day's journey over the rugged mountains.

When we tried to buy coca outfits from our porters, at first we met with absolute failure, but finally persuaded two of them to part with their treasures (Fig. 9) in exchange for tin tobacco boxes and a small sum of money. We also

tried to buy their supply of coca leaves and lime, but these they positively refused to sell, insisting that without the coca they could not carry their packs to the journey's end.

Coca Users.—These Indians we found very pleasant, always cheerful, happy, and good natured, in spite of the fact that their daily toil subjects them to the severest of hardships and the most frugal fare. Barefooted they travel over rocks and through swamps, amid cold, rain, and penetrating mist that nearly always prevails, their wages too insignificant to mention, being but a dollar or



Fig. 11.

Open shed, resting-place for the night on the Andes summit.

two for the entire trip, out of which they supply their own provisions and other necessities.

Coca Not Used in the Eastern, Low Lands.—In the village of St. Augustin, at the foot of the eastern slope of the Central Range, again but little evidence of coca using was observed. Only one woman in the market offered it for sale, her supply consisting of but one small bag of leaves. When we asked an Indian resident of the mountains near by if he had any coca, he inquired in evident disgust whether we were "momberos," as the coca users are called, the name meaning, "one who uses the mombi, or lime."



Fig. 12.

One of many prehistoric monuments, origin unknown, near the trail.

In the valley beyond St. Augustin we saw no signs of the use of coca, although we visited the town next beyond on market day, when, if ever, it would be in evidence. It may therefore be accepted that although coca is not used in the lowlands of either the Eastern or Western Colombian slope, with the mountain Indians, men and women (see Fig. 5) alike, it is an accepted necessity.

Summary.—Coca-using Indians of Colombia do not *chew* the leaf, but suck the saliva-made juice from the huge boluses of coca leaves mixed with lime, stored in the cheek. So far as known, this has been the method of these people from the traditional past. These coca users are typical specimens of perfect physical manhood, being muscular and well formed. *Whether this is due to the Coca, or is in spite of the Coca,* is a question we did not solve. Their food is simple and sparing, consisting of corn, a little sugar, no fruits, no nuts, no fish, little meat, and occasionally beans or rice. Their endurance to both the fatigue of travel and exposure to the elements is phenomenal. From early daylight to the dusk of night they run or walk rapidly. Then, after supper (their first meal since morning), they sleep in a rude "shack" with no other cover than their capes to protect them from the penetrating cold of the damp air and wet ground. The disposition of these Indians is exceptionally pleasant, they being ever genial and good natured. Not one sour, disagreeable, mentally unbalanced or wicked coca-using man or woman did we meet.

During the passage through their country, the only chronic sickness that we observed among them was a severe eye affection, due probably to the smoke of their houses. To our eyes, this smoke was unbearably irritating.—J. T. L.

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REPORT OF COMMITTEE ON WEIGHTS AND MEASURES.

GEORGE C. DIEKMAN, CHAIRMAN.

The committee has not learned of any material or important national legislation in connection with the subject of weights and measures during the past year.

Prof. Philip Asher writes as follows:

"I have not come across anything during the past year that I could suggest that might be added to your report."

Prof. H. V. Army writes as follows:

"As to the Weights and Measures Report, the only suggestions I have to offer are as follows:

1. "Acceptance of a standard carat weight of 200 milligrams by international agreement. Every move of this kind means a step toward internationalization of the entire metric system.

2. "Some years since, when on this committee, I wrote at request of the then chairman, to the congressmen of the Northern Ohio districts, urging favorable action on a metric system bill then pending. I received an interesting answer from one of the congressmen, stating he was heartily in favor of the measure, since he felt that the only way to extend our South American trade was to deal with the people down there on a metric basis. But he found that the greatest opposition came from his own district, where much fine machinery—and much of that designed for sale to the U. S. government—was made; that to make this machinery, special expensive tool and screw making appliances were installed; that in all of this machinery the gauging of the threads of the screws was by ordinary units—fractions of inches—and that such manufacturers were able by their influence to block the proposed legislation.

3. "From this, it would seem that missionary work should be conducted by those societies desiring adoption of the metric system among the chambers of commerce in the various cities of our country; for it looks to me very much as if no legislation will be obtained unless our academic efforts are fortified by approval—if not support—of the commercial side of the problem."

In New York state the board of pharmacy adopted a rule, which was subsequently approved by the state board of regents, thus becoming a part of the law, requiring each pharmacist or druggist doing business within the state, to possess the following named minimum equipment of utensils:

One (1) base scale capable of weighing 1 grain or less.

One (1) set of accurate troy weights from 1 grain to 2 drachms.

One (1) set of accurate metric weights from 50 milligrams to 20 grams. A set of glass graduated measures, two or more in number, capable of measuring from 10 minims to 16 fluidounces.

A set of glass graduated measures from 5 cubic centimeters to 500 cubic centimeters.

In New York state, the so-called Brooks bill, entitled, "An act to amend the general business law, in relation to weights, measures and containers, and to repeal section two hundred and sixty-three of the agricultural law," was approved by the Governor on April 2, 1912. The main part of the law took effect on June 1, 1913, but certain parts do not become effective until February 1, 1914. Under this act, certain preliminary regulations and requirements were prepared by the Superintendent of Weights and Measures and the chief or principal weights and measures officials of the cities of the first class.

Among the regulations and requirements, the following are of interest to pharmacists:

4. Commodities in glass bottles or jars. Commodities in glass bottles shall show the contents in one of the following ways:

(1) The capacity in terms of gallons, quarts, pints, or half-pints, or in terms

of fluidounces, may be blown in the side or neck of the bottle. Such letters shall be at least three-eighths of an inch in height for bottles having a capacity of six ounces or over, and one-fourth for bottles having a capacity of over two fluidounces but less than six fluidounces, and must be exposed, that is, must not be covered by a label or other covering.

(2) The quantity of the contents of the bottle when filled may be stated in terms of weights or in terms of fluid measure, the weight being indicated in terms of avoirdupois pounds and ounces and the fluid measure being indicated in terms of gallons, quarts, pints, half-pints or gills or fluidounces. The marking to be on a tag attached to the bottle or upon a label. The letters shall be in bold-faced type at least one-ninth of an inch in height for bottles or jars having a capacity of gill, half-pint, one pint or multiples of a pint, and letters at least three-sixteenths of an inch in height for bottles of other capacities on a part of the tag or label free from other printing or ornamentation, leaving a clear space around the marking which indicates the contents.

(3) If the bottles are capped the marking may be on the cap in terms of weight of the contents or in terms of the fluid capacity of the contents. The lettering and designation being the same as those indicated in (2) above.

(4) If the marking is etched or ground in the surface of the bottle the letters and figures shall be at least one-quarter of an inch in height. The manner of expressing the contents being the same as those indicated in (1) and (2) above.

Variation. The variation in glass bottles shall not be in excess of those allowed by agreement between the Glass Bottle Blowers' Association of the United States and Canada and manufacturers of glass bottles by the following amounts: Those having a capacity of 2 fluidounces to 6 fluidounces, inclusive, 3 percent; over 6 fluidounces to 16 fluidounces, inclusive, 2 percent; over 16 fluidounces to 32 fluidounces, inclusive, $1\frac{1}{2}$ percent; over 32 fluidounces, 1 percent.

The variation of the bottles themselves is prescribed by Section 12 of the rules and regulations agreed upon and adopted by the above named blowers and manufacturers and is as follows:

"Section 12. Manufacturers shall allow one-quarter ounce each way, from one-half to six ounces in weight, inclusive; above six ounces to twelve ounces, inclusive, one-half ounce each way; above twelve ounces to thirty-two ounces, inclusive, one ounce each way; above thirty-two ounces to forty ounces, inclusive, two ounces each way."

NOTE.—Imported bottled goods, which have been bottled and marked in foreign countries and offered for sale in this state, may be labeled and marked in terms of kilograms or grams of weight or liters (or cubic centimeters), other conditions and size of marking same as above.

(5) In connection with the weight, measure or numerical count, a statement such as "minimum," "not less than," or a statement that the contents are not "over" a certain amount or a statement that the contents are "between" certain limits will not be permissible. The law contemplates that a statement of the weight, measure or numerical count shall be within reasonable limits and such reasonable limits would constitute an average.

(6) *General Regulation.* In all the regulations, unless otherwise stated, "a

variation" shall be interpreted to mean that such variation on commodities shall be as often above as below.

(17) *Drugs and Chemicals.* Drugs and chemicals sold in wholesale shall be marked with the net weight or measure or the gross weight and tare. Allowable variations in weight or measure are such as prescribed by the Drug Trade Section of the New York Board of Trade and Transportation.

The size of the letters shall be bold-face type letters at least one-ninth of an inch in height for pounds, or multiples of the half-pound or for quantities in gallons, quarts, pints or multiples of the gallon. All other quantities shall be in bold-face type letters at least three-sixteenths of an inch in height.

(20) *Pills and Capsules.* Pills and capsules may be sold by numerical count; the size of lettering to be at least one-ninth of an inch, or 8-point bold-face type letters.

(27) *Retail Drugs.* The marking shall be in one-ninth of an inch, or 8-point type, where the weight or measure is in pints, half pints or multiples of the half-pint, or in pounds, half-pounds, or multiples of the half-pound; otherwise lettering shall be three-sixteenths of an inch. The variation will depend upon the individual substance where such variation is not already prescribed for bottled goods.

(33) Regulations on a number of commodities were taken up, but on account of insufficient data so far no attempt to establish a definite regulation was made. This applies to wooden casks, jars for salves, face creams, etc., canvas, soap-powder, certain cereals and other commodities.

These preliminary regulations have been issued by the Board above named and one of the principal objects of these preliminary regulations is to bring out any criticisms or suggestions from manufacturers. Any suggestions or criticisms supported by data will be welcomed by any of the members of the Board so that when the final regulations are issued in June there will be no need of making any changes.

Chapter 81, Laws of 1912, known as the Brooks Law, goes into effect June 1, 1913; but in its application to package goods, bottle goods, etc., will not become effective until eight months thereafter, namely, February 1, 1914, and applies to such goods which are put up or packed subsequent to February 1, 1914.

In connection with this new law, the New York Pharmaceutical Conference, William C. Anderson, President, Caswell A. Mayo, Secretary, issued the following in card form:

"The Brooks Law, requiring all commodities sold in this State to be marked with the weight, measure, or count, applies to drugs as well as to foods and other commodities.

"The law does not apply:

"(a) To commodities for consumption on the premises.

"(b) To physicians' prescriptions.

"(c) To substances put into containers furnished by the purchaser.

"(d) To sealed containers where the numerical count is less than six, the weight, avoirdupois, three ounces or less, or measure two fluidounces or less.

"Sealed containers weighing less than three ounces, avoirdupois, of pills or solids will be considered exempt.

"All other containers must bear a statement of their contents in print or in writing, clear and legible, not smaller than eight point bold face, in avoirdupois weight or fluid measure or numerical count. Such statement may be on the label or on the wrapper, blown in the bottle, or on a tag attached. Variations of three percent will be allowed. The first figure given below is the capacity in drachms, the second the permissible variations in drachms:

24—1.52	32—1.76	48—2.24
64—2.86	96—3.50	128—5.73

"These variations do not apply to beer, milk, soda, seltzer, wine or liquor bottles.

"Guaranty—The retailer will not be held liable where the packages sold by him were purchased from a wholesaler, jobber or manufacturer, residing in the State of New York, under a guaranty as to weight, measure or count."

The following extracts from editorials in one of the leading pharmaceutical journals will reflect the views of the retail pharmacists in connection with the Brooks Bill:

"This is the first of the net weight measures which has included drugs under this provision, and a study of the law and regulations leaves one more firmly convinced than ever in the wisdom of Congress in specifically exempting drugs from the net weight provision of the national food and drugs act. While the National Wholesale Druggists' Association appeared at the hearing before the legislative committee and requested the exemption of drugs from the provisions of the act, this protest seems not to have been vigorously followed up by other branches of the trade, and as a consequence the manufacturers of proprietary preparations and the retail drug trade as well are beginning to awaken to the fact that the Brooks Bill will subject them to much unnecessary trouble, expense and risk of prosecution without any corresponding benefit to the public.

"Under the regulations so far issued the druggist will be required to write on the label of each prescription for pills, capsules or tablets, the number contained in the box. In fact, the regulations provide that the number shall be stated in "eight-point bold-face type letters." He will not be required to make a statement of the liquid contents of a prescription bottle, it being assumed that this has been measured. He will, however, be required to state on the label, the weight, measure or numerical count of any drugs which he puts up into packages, ready for sale, and the variation permitted is very small. Under this regulation he would be required to state on every bottle of paregoric, of castor oil, of sweet spirit of nitre, etc., the actual net contents in fluidounces in eight-point bold-faced letters.

"The variations provided for in the regulations are wholly inadequate in so far as liquids are concerned. Under the terms of the agreement between the manufacturers of glassware and the glassblowers' union, certain definite variations are permitted in the weight of the glass used in bottles of different sizes. This variation is half an ounce above or below a given weight in bottles ranging from one ounce to eight. The mold in which the bottle is blown determines the size of the exterior. Any excess of glass present will diminish the capacity of the bottle. The specific gravity of glass being about three, this would mean that the variation in the capacity of a bottle under the union agreement would vary

from one-sixth of an ounce below to one-sixth of an ounce above the capacity intended. In a one ounce bottle this would mean a variation of $33\frac{1}{3}$ percent, whereas the regulations limit the possible variation to 2 percent. The druggist, therefore, who filled three ounce bottles without measuring them and sold them as containing three ounces would find himself infringing the law. The percentage of variation would not, of course, be so much in the larger bottles. In the New York State law regulating the size of milk bottles, a variation of eight drachms, two above or two below, is permitted in four ounce bottles, a variation of six drachms in pint bottles, and of eight drachms in quarts. It is esteemed much of a hardship on the glass blower to be compelled to conform to these requirements even in the larger sizes. In view of these facts, it will be seen that the proposed allowance of 2 percent variation under the Brooks Law is wholly inadequate.

"Unfortunately, as we view it, a net weight amendment to the National Food and Drugs Act has been adopted by the house of representatives, and, with some modifications, has been favorably reported by the senate committee, to which it was referred. If this amendment is approved of by the Senate and becomes a law, it is highly probable that the majority of the states will adopt similar amendments to the state food and drugs law. We do not think that any such legislation is needed, either national or local, and are glad to see that the National Association of Manufacturers of Medicinal Products has had the courage of its convictions and been bold enough to protest against the application of net weight laws to drugs.

"As a matter of fact, there has been no public demand for the application of the net weight law to the drug business and no abuses have been discovered by those who brought about the enactment of the Brooks law. The drug trade has hesitated to protest in the matter for fear that the public, always prone to believe evil, would assume that the trade objected to the law because it had been cheating the public. If a drug does bear a statement regarding its weight, measure or count, that statement should of course, be truthful. But no additional legislation is required. We have ample laws to care for frauds in this direction. As a matter of fact, no package goods, or almost no package goods, are sold in the drug store by measure and very few by weight. The public pays \$3.50 for a small bottle of one proprietary medicine and 50 cents for a large bottle of another. The value placed upon a remedy by the proprietor and by the public has little or no relation to the size of the package. It might be said that the enactment of the law could do no harm. It will do harm by imposing an additional burden on the state in the matter of salaries for inspectors, commissioners and superintendents charged with the enforcement of this particular phase of the law, and an additional burden on the drug trade of furnishing useless and undesired specifications on the label. The bill should never have been allowed to include drugs and should certainly be amended to exclude them from its provisions.

"Under the net weight law which was enacted as chapter 81 of the Laws of 1912 of Greater New York, all food and drugs offered for sale after February 1, 1914, are required to contain on the label a statement as to the weight, measure or count of the contents. This law applies to proprietary medicines as well as

all commodities in packages which are above three ounces in weight or where the numerical count of the individual units in the package are six or more, or where the fluid contents of the container is two fluidounces or more. Statement of weight, measure or count must appear upon the package itself as well as upon the exterior carton.

"We fail to see any reason for the application of any such law in proprietary medicines. The law is needed, no doubt, to regulate the traffic in foodstuffs, in which the question of quantity is a question of paramount importance. With proprietary medicines, however, there is no direct relation between quantity and price. The packages of proprietary medicines of all kinds vary in accordance with the character of the remedy, the size of the dose and the views of the manufacturer, but when the size of the package is once established that size is adhered to for commercial reasons if no other. The man who buys a bottle of a certain remedy does not know and does not care whether it contains one ounce or ten. His only concern is that he obtains the genuine article and gets the quantity which he has always been accustomed to receive. If the proprietor advertises one hundred doses for one dollar no additional law will be required to make him responsible for his promises as to quantity. But unless he does make some specifications of this kind the consumer will have no interest in knowing the precise weight, quantity or count contained in the package of proprietary medicine which he may buy. The law is objectionable in that it is unnecessary, so far as proprietary medicines are concerned, and makes but one more of a long list of superfluous regulations with which pharmacy is burdened."

SOME NOTES ON THE LA WALL ASSAY PROCESS.

H. W. JONES.

Some time has now elapsed since La Wall published his process for the assay of alkaloidal fluidextracts.¹ During this time we have observed in the literature but one comment upon the process, that being by Sayre,² who applied it to Fluid-extract of Gelsemium and obtained excellent results after slightly modifying the procedure.

La Wall's method is as follows:

"Dissolve 25 gm. of sodium chloride in a 100 cc. graduated, stoppered cylinder, in water enough to make 85 cc. Add 10 cc. of the fluidextract to be assayed and then make up the volume to 100 cc. Agitate well for about one minute. Let stand for five minutes; agitate again and pour on a dry filter, collect 50 cc. of the filtrate, representing 5 cc. of fluidextract and shake out with the proper amounts of the appropriate solvents, as directed for the final extraction of the alkaloid."

It is apparent that this process, if successful, would mean a considerable saving, not alone of time, but also of solvents, and these points would appeal to

¹J. A. Ph. A., January, 1913, p. 29.

²A. J. P., May, 1912, p. 193.

many analysts who have a large number of assays to carry through in a routine way. On the other hand, it carries with it the objection common to all methods employing the aliquot part, that unless the measurements are carefully made in accurately graduated instruments errors may result. We think, however, that for routine work this objection may be set aside. We greeted the method with approval and tried it out with strong hopes for success.

The first trials were somewhat disappointing, especially when chloroform was used as a solvent, as the density of the saline solution was so near that of the solvent that difficulty was experienced in obtaining a rapid separation of the two liquids. We finally adopted the plan suggested by Sayre,³ of replacing the salt solution with 2 percent sulphuric acid and obtained results comparable in every case with those obtained by the longer processes when applied to such fluid-extracts as Henbane, Stramonium, Belladonna Leaves and Root, Pilocarpus, Ipecac, Aconite and Coca.

With F. E. Guarana the results were very gratifying. A fluidextract assaying 3.55 gm. alkaloids per 100 cc. by the U. S. P. process gave 3.53 alkaloids per 100 cc. by the La Wall process. With F. E. Kola Nut the results were equally good.

Applied to F. E. Veratrum Viride the process was found to be especially good. In this case a slight modification was introduced, as follows:

To 80 cc. of 2 percent acetic acid in a 100 cc. graduated cylinder add 10 cc. of F. E. Veratrum and make up to 100 cc. with water. Shake thoroughly, allow to stand one-half hour, shake again, and filter off 50 cc.

Place this in a separator, make alkaline with ammonia and shake out with, first, 40 cc. ether and 10 cc. chloroform, second, 20 cc. ether and 5 cc. chloroform, third, 20 cc. chloroform. Evaporate solvents in a tared flask, dry and weigh.

This method was compared with a method whereby the fluidextract was made alkaline with ammonia and shaken out with 40 cc. ether and 10 cc. chloroform and then twice more with one-fourth these quantities. The combined solvents were shaken out three times with 2 percent acetic acid and the combined acid shakings were then treated as stated above.

A F. E. Veratrum Viride assayed by the La Wall modification gave 1.18 percent alkaloids and by the longer method 1.11 percent alkaloids. Another sample assayed by the La Wall modification gave 1.16 percent alkaloids and by the longer process 1.1 percent alkaloids. A proprietary tincture by the La Wall modification gave 0.53 percent alkaloids and by the other method 0.51 percent alkaloids.

The usefulness of the method as applied to F. E. Gelsemium has been fully gone into by Sayre, as stated above, and our results have verified his conclusions.

Having occasion at one time to assay a particularly insoluble Powdered Extract of Henbane, which by the regular process yielded only 0.23 percent total alkaloids, it occurred to us that the La Wall process might be applied with better success. Five gm. of the extract were dissolved as completely as possible in 10 cc. of diluted alcohol with the aid of heat. This was then poured into 50 cc. of 2 percent sulphuric acid contained in a 100 cc. cylinder, the container rinsed out with successive small portions of 2 percent acid using about 30 cc. for this pur-

³A. J. Ph., May, 1912, p. 195.

pose, the rinsings being transferred to the cylinder. The volume was then made up to 100 cc. and the mixture shaken thoroughly for five minutes. After allowing to stand for one hour with occasional shaking, 50 cc. were filtered off through a dry filter, transferred to a separator, made alkaline with ammonia and shaken out with chloroform. By this method we obtained 0.31 percent total alkaloids. A Solid Extract Henbane treated in the same way yielded 0.36 percent total alkaloids, while by the regular method only 0.3 percent was obtained. A Powdered Extract Belladonna Leaves assaying 1.46 percent by the regular method gave 1.42 percent by the La Wall method. We have not extended our investigations fully along this line, but believe the method may prove quite as useful for this class of preparations as for the fluidextracts.

In conclusion we wish to say that we are convinced of the utility of the La Wall process, especially when applied to those fluidextracts which are most prone to form emulsions in the regular methods of procedure or to fluidextracts which are liable to loss by heating for the removal of alcohol. It will be of interest to learn what results others have obtained with the process.

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BACTERIN TREATMENT OF TYPHOID FEVER.

The bacterin treatment of typhoid fever is certainly interesting, and we welcome its further investigation. That this remedy will prevent the disease in the vast majority of cases has been indubitably demonstrated by the experience in the United States Army. In a paper read at the great Congress of Hygiene at Washington, Major Russell showed that in 82,000 soldiers who have been successfully vaccinated against typhoid fever the disease subsequently occurred in only four—a record that is simply marvelous. This method of prevention is certain to be adopted in civil life in communities exposed to epidemics of the disease from any cause, and the quicker physicians resort to it, the more quickly will they fall in line with the tendencies of the time.

The curative value of the bacterin treatment in actual cases of typhoid fever is quite another matter, and one which is at present *sub judice*. We already have remedies that are effective in the majority of cases. With the intelligent use of intestinal antiseptics like the phenolsulphonates, combined with other indicated remedies, the physician can do work of the highest order. It may be that he will do better work when to this bacteriotherapy can be added. But for this we can well afford to wait for further proof.—*Am. Jour. Clinical Medicine*.

Section on Pharmacopœias and Formularies

Papers Presented at the Sixty-First Annual Convention

AN OPEN LETTER FROM PHYSICIANS CONCERNING THE PHARMACOPŒIA.

R. H. NEEDHAM.

To see ourselves as others see us is worth while, provided we pause long enough to give ourselves a careful inspection. Usually a glance is sufficient to either disgust or to add to our stock of egotism, with the result that no decided or radical change for the better is produced. We do not want a distorted or magnified view, for these give false impressions. There is nothing that can supplant the plain truth, though many times we are very loath to accept it.

For years we have gone on revising and revising the Pharmacopœia, doing our best each decade to produce a work better than the last issue and superior to any other in the world. That each successive revision committee has succeeded in its separate undertaking cannot be disputed. The Pharmacopœia of this decade promises to be the best ever issued; yet with all this, may I not ask the question: Is it not a fact that the book has lost ground with physicians during the past ten years? If it has done so, why?

If I saw but slight evidences of indifference and neglect on the part of the medical fraternity, I would not be justified in propounding this question. I have become so certain that such is the condition, that in order to prove some facts, I have sent out a number of letters to physicians subjecting the fraternity to a brief catechising on this subject. Furthermore I wished to know if they were satisfied with the present arrangement, or if they desired any changes. As to the wording and character of the questions I have asked little advice and have worded and arranged them as I thought best. For the outline of the scheme in the proposed hand book I am indebted to the chairman of this section. The men to whom the questions were sent, were selected with three purposes in view. First, no acquaintances were asked, as they were not to be influenced by my own ideas. Second, every state was canvassed, that representative opinions might be obtained. Third, several physicians, who were graduates in pharmacy, were selected, that we might obtain views from men who were familiar with the Pharmacopœia.

QUESTIONS.

1. Do you use the U. S. P. in the practice of medicine?
2. What percentage of drugs U. S. P. enter your prescriptions?
3. Kindly name at least ten reliable drugs most commonly prescribed by yourself.
4. Do you consider the U. S. P. essential to the practice of internal medicine?
5. Would you advocate listing in the U. S. P. all individual drugs used in the treatment of disease?

6. Give your opinion as to the U. S. P. of three volumes as follows:

Volume 1. Consisting of simples only, for chemists.

Volume 2. Consisting of simples and preparations both U. S. P. and National Formulary, for pharmacists.

Volume 3. Consisting of simples and preparations carefully selected and patterned after A. M. A. Hand Book of U. S. P. and N. F.

7. It is suggested that the following outline be used for drugs in Volume 3. Please comment.

1. Official Latin names.

2. Pronunciation.

3. Genitive in the Latin name.

4. English name.

5. Synonym.

6. Origin in the case of vegetable drug.

7. A concise description.

8. Solubilities.

9. Composition in case of formulas (very general) or constituents in case of vegetable drug.

10. Incompatibilities.

11. Doses.

12. Uses.

13. Official preparation in case of simples, with percentage.

14. Average dose of each preparation.

15. Method of administration.

16. The results and conclusions as based on laboratory experimentation, with the original references and name of the investigator, as to therapeutic efficiency of the drug or medicine.

8. Would physicians be profited by the issuance of yearly supplements to the "Hand Book"?

9. Any suggestions that tend to improve the U. S. P. and arouse more interest on the part of the prescribing physician will be acceptable.

Replies to question number one indicate that all use the U. S. P. with but one exception, although quite a few stated that they "consulted the Pharmacopoeia occasionally."

Replies to question number two showed practitioners were using from 100 percent to as low as 35 percent. One used 50 percent, while many others gave high percentages.

Question number three gave most interesting replies. Strange to say, one National Formulary preparation was mentioned, and but two new remedies. I beg to comment on this one a little later.

To number four about 65 percent were in the affirmative and about 35 percent negative. As a book of standards all were agreed upon; as a book of reference it was considered as of little use to the physician.

There was practically the same division of opinions as to number five. Some wanted the therapeutic values stated if such a scheme were carried out.

Question number six met with decided favor, as 80 percent were in favor of

such an arrangement. I might add that a lack of information concerning the A. M. A. hand book prevented some from giving positive answers.

Suggestions under number seven brought out surprising results, every reply being favorable. Particularly were they in favor of giving pharmacologic and therapeutic results.

Question number eight showed 70 percent in favor of a "Hand Book" issued yearly. About 30 percent were opposed and one of these suggested a yearly issuance of the National Formulary instead.

The replies to number nine were varied and scattering, but enough information was given to enable one to ascertain the attitude and trend of thought of the physicians toward the Pharmacopœia.

In conclusion I might sum up the results of the canvas as follows:

1. All use the Pharmacopœia more or less; usually less.
2. While the percentage of the U. S. P. drugs entering prescriptions is very high, this may mislead us, as quite a number of doctors consulted were graduates in pharmacy and on the other hand, a canvass of prescription files showed that the major portion of many prescriptions is made up of proprietary or non-official preparations. Physicians are very sensitive on this point and do not wish it known that they are prescribing patents or proprietaries when comparing U. S. P. drugs.
3. The ten reliable drugs as a total were about 50, showing Mercury preparations 60 percent; Strychnine and Morphine each 50 per cent; Atropine, Digitalis, Iron preparations, Arsenic, Epsom Salt, and Hexamethylamine about 45 percent; Potassium Iodide, Chloral, Cascara Sagrada, Quinine, Opium preparations and Mineral Acids 30 percent, and the rest quite scattering.
4. Only as a standard is the Pharmacopœia used by physicians as it is issued at the present time.
5. The majority favor listing of all drugs used under certain conditions as was stated in question number six and suggestion number seven. Physicians are particularly interested in the pharmacologic and therapeutic action of drugs and will consult those works which contain such data when prescribing. A division would seem advisable, if we would secure the attention the Pharmacopœia merits from the physician.
6. That a "Hand Book" would be welcomed by physicians, there can be little doubt, after looking over the returns.
7. I will quote a few suggestions given by physicians: "More ways of giving various drugs in a pleasant and palatable manner"; "Give physicians all the information and instruction possible as to prescription writing—few know anything about it"; "Devise some ways and means whereby the Pharmacopœia can be made more useful and interesting to the physician"; "It is too large a volume for doctors, as a reference book"; "Physicians know very little about the Pharmacopœia"; "Eighty percent of the physicians have never seen a copy of the U. S. P."

I have quoted verbatim and to me it is a frank and clear indication that we must do something to bring this excellent work to the physician's notice, not merely as an authority on drugs but as a practical and helpful work to be used by them in their daily practice.

Section on Education and Legislation

Papers Presented at the Sixty-First Annual Convention

IS THE PROHIBITION OF METHYL ALCOHOL IN PREPARATIONS FOR EXTERNAL USE ONLY JUSTIFIABLE?

JOHN C. WALLACE, PHARM. D., NEW CASTLE, PA.

The attention of the writer was first directed to Methyl Alcohol when an effort was made to incorporate in the misbranding section of the Pennsylvania Drugs Act a third paragraph as follows:

"If it contain Methyl or Wood Alcohol."

This paragraph, however, was not incorporated.

My attention was next directed to the subject at a legislative conference under the auspices of the N. A. R. D. at Niagara Falls in 1911.

That Methyl Alcohol is entirely unfit for use in preparations intended for internal use, is frankly admitted by all of the manufacturers of the same, and I agree that it should be a misdemeanor punishable by fine and imprisonment for any one to make such a use of it, but I fully believe that it is entirely safe for use in preparations for external use only, and so labeled.

The question having been raised, I concluded to look into the subject for my own satisfaction, and was greatly surprised at the lack of information contained in our text books on this subject, and concluded to collect some information on my own account.

Very exhaustive reports relative to Methyl Alcohol have been made by Dr. Casey A. Wood, of Chicago, and Dr. Frank Buller, of Montreal. Many cases of blindness are reported from its use internally; a few as a result of inhalation, but practically none from its use externally.

The writer secured a list of the plants in Pennsylvania and found the number to be 37, then secured a list of physicians and druggists residing near these plants and entered into correspondence with many of them, with the result that no cases of poisoning or blindness are reported, but on the other hand, many cases are found of men who have been employed in these plants for a great period of time—some as long as 25 years—and their vision is still unimpaired.

Much ado has been made in relation to two cases of poisoning by inhalation by workmen varnishing vats. The facts are that the men were at work varnishing vats with shellac made from Methyl Alcohol. The vats were 20 feet wide and 10 feet deep, cylindrical in shape, and almost entirely closed, there being a vent of only three or four inches in diameter at the top. The workmen entered the vats through a manhole, which was partly closed. The temperature raised to about 70 degrees, in order to dry the interior, and the exposure lasted several days.

With these facts given I think a different light is thrown on the incident, and the blame should not be placed on Methyl Alcohol.

In view of the fact that there is about 25,000,000 of dollars invested in wood alcohol plants in the United States, and employment given to about 75,000 people, ten million dollars being invested in plants in Pennsylvania, and until more proof is given that its use externally is dangerous, I do not believe that the regulations and proposed legislation prohibiting its use in preparations for external use only are justifiable.

PHARMACY IN CALIFORNIA IN 1913.

FRED I. LACKENBACH, SAN FRANCISCO.

At the recent state pharmaceutical convention at San Jose a number of prominent pharmacists and educators ventured to criticize the medical profession for its lack of familiarity with materia medica subjects and urged upon the colleges of medicine the necessity of devoting more attention to these subjects. The prominence of the men engaged in this controversy brought out newspaper comment in which it was stated that physicians could diagnose well enough, but when it came to selecting the remedy to fit the ill, they were found wanting and at a loss to know how to proceed.

As yet we have heard no retaliatory utterances on the part of California physicians. A letter from a Nevada physician appeared in the Pacific Medical Journal under the caption, "Are Doctors Fools?" in which the druggist is taken severely to task for his own discrepancies, and he is accused of endeavoring to justify himself in the eyes of the public by belittling the profession of medicine.

The dignified silence of California medical men is what would naturally be expected when one considers the exceptionally high standard of medical education in California compared with the deplorably low standard of pharmaceutical attainment. It is a gap no self-respecting physician would venture to bridge.

It is noteworthy that college men took the leading part in this discussion—men holding chairs in leading medical and pharmaceutical schools. These men above all others should be in a position to judge and to know the necessities of the medical and pharmacy student. They should know not only what is essential to the groundwork of the student's education, but their knowledge should be broad enough to understand the conditions under which the student has to labor when he embarks upon his career. It is not sufficient that the student should know what the past has accomplished. He should be alive to the kaleidoscopic changes of the present as well as the general drift of medical and pharmaceutical progress, so that he may meet new developments as they arise. If the student is not educated along these broader lines, he is incapable of adapting himself to new conditions and consequently lowers the standard of the profession of which he is a member.

The question then arises, how well is the college equipped to prepare the student for the broader activities of life after he emerges from the college? Is this equipment confined to a study of text-books which are out-of-date almost

before they leave the press? Is it confined to a study of laboratory methods which the student rarely or never has occasion to apply after leaving college? Is it confined to the teachings of professors who are almost wholly unacquainted with practical working conditions and who preach a gospel two-score years behind the times?

Materia medica is a subject which has changed and is changing more than any other branch of medicine. The difficulty of revising the Pharmacopœia and criticism of the Committee of Revision is primarily due to this fact. We have thousands upon thousands of medicinal agents which have at some time or other been applied in the healing art. Like the laws of the land, they have multiplied to such an extent that it is difficult to know whether one is doing right or doing wrong if the statutes are taken as criterion. Does a knowledge of materia medica presume that one need be familiar with all this lore? No, that is unreasonable. Our materia medica preceptors would familiarize us only with the principal medicaments. And what, pray, are the *principal* medicaments? They are those substances which appear to the preceptors to be of particular importance. Whether they are of importance actually, at that time, or a year hence, is a conundrum the medical student will be obliged to solve for himself after he leaves college. It calls to mind a weakness some medical men have of prescribing a diet for their patients such as is acceptable to the physician's own palate. The instructor is apt to give the student for digestion those materia medica subjects which appear to the instructor to be of importance.

It is therefore apparent how ridiculously stupid it is to talk about *teaching* materia medica, when the best that can be done is to give the student but a general idea of the elementary principles involved—as the writing of prescriptions, chemical and physiological incompatibilities, dosages, etc.

To the intelligent and enterprising pharmacist, the physician's lack of familiarity with materia medica and allied subjects is a source of gratification rather than censure or criticism. It offers the professional pharmacist an ideal and unlimited opportunity to expand his own usefulness.

It is virtually impossible for the busy practitioner to keep in touch with progress in the fields of pharmaceutical and biological chemistry; the more recent and useful additions to the materia medica; the problems of sterilization and disinfection; the subjects of dosages; incompatibilities; suitable and available methods of exhibiting various medicinal substances, and many other subjects the pharmacist should be thoroughly familiar with, that he may be in a position to serve and advise the inquiring physician. That is the pharmacist's natural and legitimate domain and the physician has the unquestioned right to expect the pharmacist's assistance in such matters. This is the situation in a nutshell. How well then is the pharmacist equipped to meet this situation? In the first place what is meant by a *pharmacist* and what should be his qualifications? A pharmacist, first of all, should be one of broad humanitarian instincts. His calling should be a source of pleasure and pride and a means of giving expression to his individuality and ambitions. His primary object in life should be to serve—not in the sense that he should become "everybody's goat," nor render service without adequate return. The laborer is worthy of his hire. The type of service referred to is that which contributes toward the general uplift and bet-

terment of the race, and the best welfare of the individual to whom he ministers. He should be broad-minded enough to grasp the fundamental fact that the physician himself is but the servant of the one who employs him to minister unto his suffering and disability. The physician is but the incident or perhaps accident. The pharmacist should bear in mind the fact that in the final analysis, he is directly responsible to the sick and the needy. With this thought uppermost in his mind, he will not substitute inferior drugs; nor will he counter-prescribe for pecuniary gain; nor will he work off proprietary nostrums, the composition of which is unknown to him. He will not attempt to bribe the physician to stand in with him to the detriment of the latter's clientele, nor will he permit inferior chemicals and cheap pharmaceuticals to pass out under his guarantee. He will cultivate that attribute wherein he personally shoulders responsibility for his own acts, rather than shift that responsibility upon some obscure producer or non-de plume.

He should be possessed of a broad elementary knowledge of the medical and pharmaceutical sciences. He should be able to discuss intelligently with the physician, any medical subject with which he as a pharmacist may be expected to be familiar. By what manner or means he acquires such knowledge is his own concern. It is the province of the state to see that the safety of the public is secure in his hands.

The pharmacist failing in these prerequisites, the physician is justified in making good the deficiency in any manner that presents itself. *No way has presented itself that begins to take the place of the qualified pharmacist.* The physician as a self-dispenser is "an error." The great pharmaceutical establishment as educator and purveyor to the medical profession, has seen its best days. The doctor is ceasing to worship at the shrine of the pestiferous detail man. One of the chief causes of the decline and increased competition among the pharmaceutical houses is the great falling off in the use of drugs. The doctors are not "doping" their patients as they used to. It is no longer fashionable for people to drench their systems with all kinds of belly wash.

The retirement of some of the old materia medica stand-bys has left the physician much at sea. It is a magnificent opportunity for the qualified pharmacist to assert himself. But where is he? He has buried himself in obscurity. To speak of him as a profession is an affectation. The term pharmacist itself smacks of pedantry. But everybody knows the *druggist*. He sells face powder and postage stamps. Like the corner grocer, he is everywhere in evidence. The difference is that the grocer is largely a necessity and the druggist is largely a superfluity. About ninety percent of his business could be taken care of by the grocers and department stores, the other ten percent could be handled by the manufacturing pharmacists who deal direct with the physician. There is great need for the man who is satisfied to do the little things carefully and well; who can put personality into his effort and leave no trace of doubt as to his reliability—who can make a statement both the physician and patient can depend upon. The highest tribute that can be paid the pharmacist is the physician's assurance to his patient that the product was dispensed by a man who puts his soul into his work.

Section on Commercial Interests

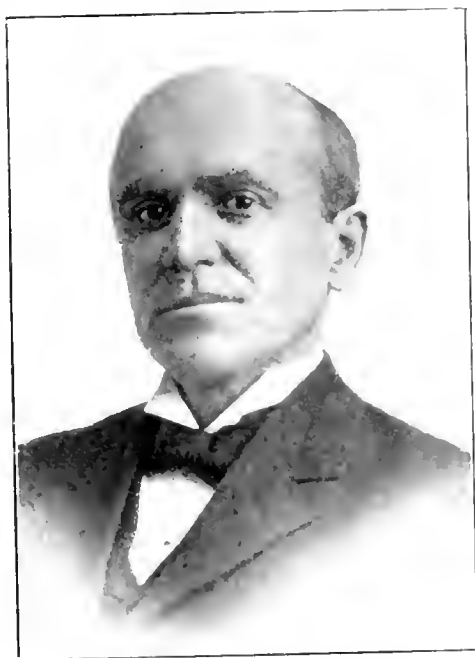
Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS.

A. V. PEASE, FAIRBURY, NEB.

To accurately picture the state of the drug business over the wide territory covered by the American Pharmaceutical Association is beyond the power of one man. It is, however, possible to indulge in some fairly accurate generalities.

It is too often that men of our profession seem to see very untoward conditions. Ruinous cut prices, the dispensing doctor, the rapidly growing variety of mer-



A. V. PEASE, Fairbury, Neb.
Chairman Section on Commercial
Interests, 1912-1913.

chandise we are compelled to carry, all these arouse the fear of the more timid. I am not in sympathy with the pessimist who sees only falling off in the profitable business, ruinous competition and general decay. The aggressive and far-seeing merchant makes conditions, largely; and if conditions get wholly beyond his control, he adapts himself to the change.

If local conditions force a loss in the volume of business, the keen merchant will reduce his selling force and overhead expense, and put in more of his own

personal service. It has frequently proven the saving of the merchant to take more careful account of his expenses, to cut off superfluous employees, and to get into closer touch with his trade.

Our business is peculiarly one of personal service, and the pharmacist who can impress the community that his hand is driving and that he knows the road, will have more passengers.

The retail business demands constant growth, if not in volume, then in net profits and accumulated surplus. To a certain point in life the earning power of the proprietor increases; beyond that it declines. The business that ceases growth in one, any, or in all particulars does not stand still. When growth ceases, decay begins. The business that stands still goes back. Retrogression may manifest itself slowly. It may be a gradual accumulation of unsalable stock, or the loss, one at a time, of customers who demand better service or more modern ideas. Or the shifting of population may change the character of the patronage, without a corresponding change in the store. But, however it comes, it must be noted and met. Could we look upon our business, not merely as a means of support, but as a most fascinating game, it would look more attractive to us; and if one is not sufficiently in love with so fascinating a business, then, the better out of it.

I have deep respect for the man who finds enjoyment in the business of pharmacy. It was my fortune, when a boy, to know an old fashioned French pharmacist—one trained as an apprentice in his native land. His business was very small. By force of circumstances he was located in a small western country town. He was far from being a merchant, but he was an enthusiastic scientist so far as his education and training permitted. His attainments were neither appreciated nor in demand, but he took an honest pride in his tinctures and elixirs. The scrupulous care he gave to his simple apparatus and utensils was a joy, and he had an honest horror of any pharmaceutical not made by his own hands. I used to enjoy to visit with him in his pitifully small store in a nearby town, and from him I imbibed a love of pharmacy as a recreation and pursuit, as well as a means of livelihood. I believe that we must have a real love of pharmacy in order to win the highest commercial reward.

There are several phases of our business that attract attention. The steady growth of cooperation is impressive. Cooperation in manufacturing, buying and selling. It is needless to mention by name one such organization that has over seven thousand members scattered among English-speaking people. It has not grown because the promoters discovered any new principle of commerce. They merely copied their predecessors and took advantage of their educational success. And this great organization has grown because it followed the line of least resistance.

It does not require a large organization to buy together in reasonable lots. The retailers in any community should be on such terms that they could buy together. If four dealers in a city usually buy one-fourth gross of an article costing \$2.00 per dozen and selling for 25 cents, that is, 50 percent gross profit on first cost. If buying together in gross lots they get 5 percent discount and sell at the same price, the article yields 58 percent gross profit. The additional 8 percent or even 5 percent may mean profit or loss for the year.

The pharmacist's special knowledge of chemistry, botany, toxicology and posology peculiarly fit him to give much practical advice, and reap profit in the sale of germicides, sprays, washes, dips and disinfectants. Such information is readily accessible, much of it through government bulletins. Our customers are constantly in need of disinfectants for their houses and barns, sprays for orchards, shrubbery and house plants. There is a growth of general intelligence along these lines and judicious advertising will bring results. It might be an extreme application, but there are communities in which it would be profitable for the druggist to finance some reliable man with a power spray outfit and supply him with the necessary chemicals for commercial spraying of isolated fruit trees in private grounds.

A little knowledge of simple remedies for live stock is profitable for the retailer. The recent epidemic among horses in Kansas and Nebraska was a striking illustration of an opportunity for the retailer. The man who saved his customers from foolish and harmful remedies stored up good will that must bring accumulated dividends.

The city pharmacist is often asked for advice as to poultry remedies, as well as the country pharmacist. Many residents of the city are poultry fanciers and do not hesitate to pay well for good advice. Here lies a profitable field.

This same special knowledge fits us as advisers to small manufacturers and repair men. Do you go after this business? Are you aware of the persistence of specialty men in searching for this business, which lies at your very door. Reliable service and the prevention of mistakes gains friends and dividends, and better yet, a sense of usefulness and service in the exercise of these faculties. As many men rise to wealth and power in our business as in any other business.

The growing tendency to restrict the sales of habit-forming drugs should meet with the fullest support of the retailer. No reputable pharmacist will ever sell a habit-forming drug excepting upon the prescription of a reputable physician, and never repeat the prescription except as authorized by the physician. We cannot afford to have in our ranks, bringing disrepute to our business, any one who will do otherwise. In self-defense we should welcome reasonable restrictions. The term habit-forming drugs is coming to mean a larger and larger class of preparations.

Another changing phase of pharmacy which challenges our attention is the rapidly growing use of bacteriological products. The stage is set and the curtain rises. Through the press and the medical fraternity the public is learning the certainty and safety of these products. Let us look at it from a purely business standpoint. A case of typhoid fever treated in the old way used to mean a bill of ten, fifteen or twenty dollars for prescriptions and sick-room supplies, a long drawn out spell of sickness, and possibly the undertaker. Now it means a package or two of typho-bacterin therapeutic with supportive after treatment and a number of immunizing doses. Just a few days ago I received a telephone message from a nearby town calling for one package of typho-bacterin therapeutic and nine immunizing doses. And there follows a demand for prophylactics, disinfectants and germicides. And there is left a family who are thoroughly alive to the value of preventive remedies. Paradoxical as it may seem, healthy, earning customers are better patrons of the pharmacist than sickly ones.

of small earning power. The great range of merchandise kept by the modern drug store, appeals to so many wants of the healthy person that the pharmacist is interested in getting his patrons well and keeping them well.

Let me tell you of a recent epidemic of diphtheria that occurred in Lincoln, Nebraska, and the increased business that it brought. The epidemic was in a residence neighborhood supplied largely by one dairyman. It was soon ascertained that he had a man in his employ with a sore throat that proved to be diphtheretic. Before the epidemic was stopped there were eighty-six cases. One manufacturer of bacteriological products alone sold through one salesman two hundred and twenty-eight therapeutic doses and two hundred and sixty-nine immunizing doses. This does not include the preparations of any other manufacturer, nor orders sent direct by dealers. At the end of the epidemic the stock in hand of the retailers were at normal. It is noticeable that ninety packages of those enumerated were of from 7,500 to 10,000 units. There was a total of 497 packages enumerated, about five to the actual case. And this only tells part of the story.

One small suburban store that does an annual business of about \$10,000, sold in one week, above his normal business, more than \$400 worth of antitoxin and disinfectants. The public press gives us a lot of free advertising at such times and we are remiss if we do not profit by it.

However, we kill the goose that lays the golden egg if we presume upon the credulity of the patient. He must have honest and competent advice. He must be saved from mistaken purchases. If any member of his family shows the least sign of infection, he should be urged to call in a competent physician. Correct diagnosis and treatment is his proper work. We may supply him with culture tubes, stains, test solutions and test outfits.

The pharmacist of the future must be better trained in bacteriology. Our schools in pharmacy should give more complete courses. The pharmacist must be able to assist the doctor in making a test. It is not far in the future when all good pharmacists will be supplied with microscopes, incubating ovens and culture mediums. Yes, even to prepare antogenous vaccines as required.

Careful attention to the storage of bacteriological products is important. No pharmacist should attempt to carry a stock without keeping them in a refrigerator. Regular attention to expiration dates is desirable. In fact, a register of the stock on hand, with the expiration dates might well be kept.

I believe that the retailer should receive full list price for all vaccines. The investment, cost of exchange, frequent telegrams, cost of refrigeration and occasional loss justify full price. In fact, it is worth much to the physician to have a full stock at hand for instant use. Time is a very important element in the use of bacteriological preparations.

In conclusion, the outlook for the pharmacist who is a merchant as well as a professional man is very rosy. The public is always willing to pay for real service. Our business is just as necessary as that of a grocer or blacksmith. If general business conditions become untoward, the pharmacist can cut his overhead expense as quickly as his fellow merchant and rely upon his professional training for his profit.

Section on Historical Pharmacy

Papers Presented at the Sixty-First Annual Convention

THE CHAIRMAN'S ADDRESS.

JOHN G. GODDING, BOSTON.

As Chairman of the Section of Historical Pharmacy it becomes my duty and privilege to extend to you a hearty greeting to the eleventh annual meeting of this Section.

The remarks of the Chairman will be brief as he desires to conform to the rules adopted by this Section at its inception. The work of this Section has proved interesting, although the results have not been as great as anticipated.



JOHN G. GODDING, Boston,
Chairman Historical Section and Chairman
of the Council, 1913-1914.

The first ten years' history of this Section was very ably reviewed by my predecessor. The past year records the following noteworthy events:

1. The election of Mr. Herman Schelenz, the German Pharmaceutical Historian, as honorary member of the American Pharmaceutical Association.
2. The admission of papers on Historical Pharmacy to the Eleventh International Congress of Pharmacy at the Hague.

3. The enactment of the Insurance Act in Great Britain, in effect this year, being the first law passed in English-speaking nations dividing the lines or duties of the physician and pharmacist.

4. The establishment of a chair on Historical Pharmacy in the University of the State of New Jersey, to be filled by Mr. Otto Raubenheimer.

The following recommendations are submitted:

First. That this Section be represented by a paper on Historical Pharmacy at the Eleventh International Congress of Pharmacy at The Hague in September next; that the history of the American Pharmaceutical Association by W. C. Alpers, be selected.

Second. That this Section go on record as approving the projected American Pharmaceutical Association building or official headquarters, in order that its historical collection and library may be carefully preserved and maintained in suitable quarters as the dignity of this Association demands.

Third. That the Secretary of the Section be directed to open correspondence with colleges of pharmacy and universities having departments of pharmacy, regarding exchanges for library or historical collection.

Your Chairman has complied with the recommendation of his predecessor in compiling a list of contributors to this Section, and recommends that it be kept complete by the addition of each year's contributors.

In conclusion, we should ever hold in grateful remembrance Mr. Ewen McIntyre, Mr. Thomas P. Cook and Mr. William McIntyre and Mr. Oscar Oldberg, who have passed away during the year. Their's was always an active interest, either by contributing papers or sharing in the discussions.

I desire to acknowledge my appreciation for the honor of electing me Chairman of this Section, also to the officers and the contributors who have kindly responded with papers and with contributions to the historical collection.

"SHOWING" THE PHYSICIAN.

It is the detail men who are winning the game for the proprietary houses, and the dilemma will have to be met by the same tactics before lost ground can be regained. I certainly believe that if every physician had a sample of the more important U. S. P. preparations on his shelves, so that he would be familiar with their general appearance and properties, there would be fully ninety percent more U. S. P. and N. F. preparations used.

The big majority of mankind are visualists. Physicians are part of that majority: else the great clinics at Vienna and elsewhere would not flourish as they do. If men will spend hundreds of hard-earned dollars to see operations the entire technique of which is to be read in any modern journal of surgery, don't you suppose they will use the drugs that are brought to their door that they may see what they are and become familiar with them, in preference to a heterogeneous list thrown together in some dry book called "*Materia Medica*"?—C. E. Remy, *M. D.*

The Women's Section

Proceedings and Papers Read at the Sixty-First Annual Convention

FIRST SESSION.

The initial meeting of the Women's Section was called to order by the President, Mrs. John G. Godding, at 3 p. m. on Tuesday, August 19, in the Assembly Rooms of the Hotel Hermitage, Nashville, Tenn.

Prayer was offered by the Rev. Dr. Detwiler.

Mrs. Robert Lee Thompson brought the greetings of the Nashville ladies as hostesses. Response was made by Mrs. Henry M. Whelpley, of St. Louis.

Greetings from the American Pharmaceutical Association were presented by Dr. J. H. Beal, General Secretary. The cordial welcome which Dr. Beal brought to the Women's Section from the parent body was very pleasing to the members. Among other things he said:

"The creation of this Section and its success is a question which is near to the hearts of the men of the A. Ph. A. who make the welfare of that Association their thought by day and their dream by night. There is a work that you can do that cannot be done without you. We men feel that we are capable of handling the coarser, heavy work of the Association, but we believe that there is a finer quality of work that can be done by the Women's Section that you can better accomplish. We welcome you most heartily as our coadjutors in making the A. Ph. A. conserve the best traditions in pharmacy, and not to be only a conserver, but a developer of what ought to be our common aim."

Professor Joseph P. Remington was then called upon by the chair to make a few remarks, and he gave in interesting, informal talk, welcoming the Women's Section to the A. Ph. A., and heartily endorsing the Section and its objects. He dwelt at some length on the story of Betsy Marshall and the establishment of the old Ellis drug store in Philadelphia as an example of the work a woman may accomplish in pharmacy and the influence for good which she impresses on all who are associated with her. Professor Remington unqualifiedly approved the Women's Section and asked that it give especial attention to the History of Pharmacy.

The President announced that the next order of business was the Report of the Secretary, which was as follows:

REPORT OF THE SECRETARY OF THE WOMEN'S SECTION OF THE A. PH. A.

On December 31, 1912, President Day of the American Pharmaceutical Association appointed the temporary officers and committees for the Women's Section, but it was not until the latter part of March that the work of organization and the preparation for this initial meeting was actually begun.

Your Secretary's work has been largely the care of the correspondence incident

to perfecting the plans for this meeting, the details of which will be reported by the various committees.

In an effort to make known the existence of the Women's Section to as large a number as it was possible to reach, a letter was addressed to the pharmaceutical press asking editorial comment on our Section. A large number of the journals responded generously, some giving us liberal mention in a general comment on the A. Ph. A. Convention, others reprinting the article which appeared in the JOURNAL, and still others simply publishing the Secretary's letter. These articles will be more interesting reading in years to come than now and have therefore been preserved in scrap-book style and attached to this report.

Another publicity effort was the sending of a letter to the presidents of the



MISS ANNA G. BAGLEY, Ph. G., Columbus, O.,
Secretary Women's Section.



MRS. HENRY M. WHELPLEY, St. Louis, Mo.,
Treasurer Women's Section.

State Pharmaceutical Associations throughout the country, asking that mention of the Women's Section be made in the presidential addresses presented at the annual conventions, and extending a general invitation to the pharmacists of each state to attend the Nashville convention and especially urging women pharmacists to affiliate with the A. Ph. A. But few replies were received in answer to this request, but no doubt many of these state presidents complied with it, although there will be no opportunity to read these addresses until the printed proceedings are distributed.

The following ideas which have come to your Secretary in the course of her work are submitted for your consideration.

Few young organizations, whether of men or of women, are so fortunate as the Women's Section in having placed in its hands for use at the very beginning

of its existence such splendid machinery as is offered to us by the A. Ph. A. If properly managed, this gives us the means for a sure and healthy growth and development without limit.

One of these instruments right to our hand is the JOURNAL of the Association, in which Dr. Beal, as editor, has courteously offered us such space as we may need to further our organization. Your Secretary would recommend the establishment in the JOURNAL of a permanent department, recording each month such items as will be of interest to the members of our Section.

To properly provide for the contributions to the JOURNAL, let us have appointed a Press Committee, which could also look after the publicity in other drug journals and such publications as would be especially interested in the activities of a women's organization.

Whenever the Women's Section sees an opportunity to cooperate with the officers and committees of the A. Ph. A. to the advantage of either, it should be promptly done, so that we may keep pace in thought and action with the parent body.

In the formation of a Women's Branch Section in connection with each local branch of the A. Ph. A., we have another good means for interesting the women and drawing the association threads closer. The members of the Branch Section could occupy themselves as they might choose at their meetings which would be held at the same time as the local branch meetings, and no doubt the Women's Section in time would gain as much from its branches as the A. Ph. A. does from its local branches.

Another beneficial agency would be to keep in close touch with the colleges of pharmacy, boards of pharmacy, state associations and their women's auxiliaries, local druggists' associations and the various women's organizations. Through these institutions we would be able to reach a large part of those women eligible to membership in the A. Ph. A. and therefore in the Women's Section.

Our permanent organization should provide for the preservation of our records and proceedings. Arrangements should also be made for providing the Secretary with a complete list of drug exchanges.

The proceedings of our Section will be printed in the JOURNAL, and the preservation of our records being provided for, this brings us to the consideration of the project which will no doubt be discussed by the A. Ph. A. at this convention, that is, the establishing of an A. Ph. A. headquarters. If this receives favorable action, our Section should at once seek for quarters and recognition on the same basis as other sections, pledging our cooperation toward its establishment.

The Secretary wishes to thank the members of the official family who have so generously responded to her calls for help in this organization work, a task undertaken by her with many misgivings.

ANNA G. BAGLEY, Secretary.

Mrs. John C. Wallace, First Vice President, was called to the chair while the President read her address.

ADDRESS OF THE PRESIDENT OF THE WOMEN'S SECTION.

*Madam Vice President, Women of the American Pharmaceutical Association,
Honored Guests, Nashville Friends:*

In the joy of fellowship of this gathering I esteem it a great pleasure and my delightful duty to bring you greetings. It is my distinguished privilege to bring you greetings from the cloud-capped mountains, sunny hillsides, busy marts of New England, from where old ocean laves our shores, from the "Athens of the East" to the "Athens of the South," to the land of the "magnolia and mocking bird." We bring you greetings from all over the United States.

The position to which I am called was unsought. I came to it with fear and trembling, yet sensible of the high honor conferred and am deeply grateful.



MRS. JOHN G. GODDING, BOSTON,
President Women's Section.

In the march of events is heard the marshalling of new forces that are to lead all causes, nations and peoples to ultimate victory. Is not that as true in our pharmaceutical world? In advancing the interests of this profession the men of the American Pharmaceutical Association recognize the place women are attaining, their wonderful growth in whatever direction they turn their forces and accord them their rightful position.

The American Pharmaceutical Association is classified, as you know, by sections, and it is not strange that to its list should be added a Women's Section, which "was a piece of the constructive work" of the sixtieth annual meeting held at Denver, Col., 1912. Just now the upward and onward movement of womankind has taken a more coherent form than ever before.

In the preparation for our first annual meeting of the Women's Section we fully realized that only a small part of the preliminary work could be done before the Nashville meeting, yet we most earnestly desired that this first meeting should emphasize the reason of our being and justify in some measure the expectations

of the American Pharmaceutical Association, which so generously voted us a part of their organization. In this work I have been ably sustained by our Secretary, Miss Bagley, who despite many onerous duties has given generously of her time and strength.

I have tried to come before you with careful consideration of the needs and future policy of this Section. I quote from one high in authority regarding this Section. "In providing for this Section it was the desire of the Council to leave the working out of the plan to the women themselves. It was believed that the creation of a section of this kind would give more formal recognition to the ladies who so regularly attend the convention and are so loyal to the American Pharmaceutical Association principles. It is also the opinion that a section of this kind can accomplish more for the women than the independent organizations which have been attempted from time to time, because the Section will have behind it all the influence of the American Pharmaceutical Association and the prestige of its sixty years of history. It is also thought that such a section would afford an opportunity for emphasizing the fact that women have a definite place in pharmacy and are as much to be heard in pharmaceutical affairs as are the men, which has always been the attitude of the American Pharmaceutical Association."

Object of the Women's Section. The object of this Section shall be to emphasize the right and capability of women to engage in pharmaceutical pursuits as a means of livelihood; to unite the women employed in pharmaceutical pursuits for mutual encouragement and assistance; to labor for the improvement of legislation regulating the registration as pharmacists of women employed in the practice of pharmacy in hospitals and other public institutions; to unite the women members of the American Pharmaceutical Association and the women of the families of the American Pharmaceutical Association in a section for social purposes; and to cooperate in the promotion of the general progress of pharmacy and of the American Pharmaceutical Association."

For many long years we have enjoyed attendance on the annual meetings of the American Pharmaceutical Association. What delightful memories we cherish; what enduring friendships we have made! We have basked in the sunshine of pleasure while the strong and earnest men have gathered in the sessions working for the purposes to which they have dedicated their lives. Now comes the call of duty and in response we lay at the feet of the American Pharmaceutical Association our cheerful fealty, our absolute loyalty.

The Place of Women in Pharmacy. That women are already attaining a strong position in pharmacy is evidenced by some interesting statistics gathered in reference to this subject. She may not have quite "arrived," as the French say, but she has made a good start along the way. Her position is assured by the fact that a fair number have entered the profession and are successful. The first woman graduate in the United States was in 1862 from the New York College of Pharmacy a half century ago. There are now approximately, 754 graduates in the United States, including a few in Canada, and 582 registered women. Many of the latter have college training. The second graduate was in 1877 from the Massachusetts College of Pharmacy, where women are admitted on the same conditions as men to the various courses of the school. There is an

increasing number of such students and pharmacy offers inducements to well educated, energetic women. The field for women in pharmacy is unlimited. In addition to the retail business there are many hospital positions and women are preferred in those institutions. They have specialized in bacteriology, in organic and analytical chemistry. There has been at least one microscopist identified with government work. Several have taken the degree of Bachelor of Science in Pharmacy, and find opportunities in state dairy and food departments.

The Duty of Women Pharmacists to Become Members of the American Pharmaceutical Association. To the women pharmacists I make my plea that they become members of this time-honored Association now closing its sixty-first year. Its ideals are of the highest and best; its goal, the placing of pharmacy in its true and rightful position. Never swerving, quietly, unobtrusively, steadily, this Association has labored unceasingly for the good of pharmacy and the pharmacist. There has been service in the highest and best sense, disregarding all that pertained to the charlatan and fakir, and thus enduring foundations were laid.

Quoting from a letter received from a lady who has long been a regular member of the American Pharmaceutical Association:

"Women pharmacists should by all means, be active members of the American Pharmaceutical Association and the state associations. I believe one of the reasons why women have not made as much progress as they ought to have made since the first woman entered the profession is that they have taken very little interest in pharmaceutical affairs outside of their own little circles and very few of them have become a part of the organized body of pharmacists. They are entitled to all the privileges accorded to men and I believe would be welcomed by the Associations, and I am sure they would have received much more recognition than they have had they been alive to their opportunities in this respect.

"I have regularly attended both my state and National Associations since 1907, and in all those years the women pharmacists who have attended the sessions of either of these bodies could be counted on less than the fingers of one hand. Only a very few ever attended the American Pharmaceutical Association meetings, and I have been alone in my attendance at my state meetings, with one or two exceptions at different times.

"I think every sensible woman who has taken up the profession of pharmacy will agree with me in saying that women do not want to be favored, or have allowances made them just because they are women. They should stand on their own merits as pharmacists, as men do, and if they fail to make good it will be better for pharmacy in general if they are eliminated. If the same percentage of the whole number of women pharmacists as that of the number of men would attend and take an active part in the deliberations of the American Pharmaceutical Association, they would exert a very perceptible influence in pharmaceutical affairs."

The Mission of the Women's Section. Opportunity, the golden word that bounds the whole of life, the opportunity of service to the vital interests and problems of the world's work, should make us consider and realize the great part we as women are taking in the progress of the day. So much of "Women's Work" has been taken out of the home; the factories have supplanted the spinning wheel of our grandmothers; our garments and food supplies are manufactured outside the home. All these with the higher and broader education for women are causing men to see this changing position and gallantly call her to take her place beside them in the world's work.

Cooperation is making woman broader in her sympathies as well as her understanding. A million federated women in the United States are making the world know of their activities in every field. Is not the time ripe for the work of a Woman's Section, giving the American Pharmaceutical Association the opportunity to avow openly its long standing position toward women in pharmacy, and demonstrate that there are many avenues awaiting women in pharmacy? "To break down useless barriers and bring us to the golden age when men and women shall walk equally together."

To give inspiration and encouragement to women capable of entering this profession; to do all in our power to change the attitude of the public towards women desiring the vocation of pharmacy; to prove there is no calling better fitted for women, this is the mission of the Women's Section.

The best way to meet prejudice is not by argument or entreaty or reproach, but after the manner recited in Charlotte Perkins Gilman's poem on Prejudice:

"I took my hat, I took my coat,
I set my burden fair
And I walked directly through it
As if it wasn't there."

The Section may become a mighty factor in the betterment of pharmacy: an army of builders alert, ready, systematic and scientific, with this as our motto: "From each as she has power to give, to each as she has need."

In interesting young women to become pharmacists, a broad field lies before us. Many women are in every way adapted for pharmacy. In our experience it is only a girl of superior intellect, very much in earnest who will attempt this line; she is of the highest type.

Among the activities in which both professional and non-professional women can work together effectually, is the subject of shorter hours, which is claiming the attention of pharmacists throughout the country. This should be regulated by the pharmacist taking the initiative. Let us women be in the vanguard of progressive thought and ideas.

Matthew Arnold has said: "If the time ever comes when women shall come together simply and purely for the benefit of mankind, it will be a power such as the world has never dreamed."

As the prophets of old logically reasoned: If each builds before his own door, lo, a great wall of protection shall surround the city, so while our part may seem insignificant, it may be a link in a strong and saving chain. "Nothing in the world will come to us because we wish it; all success is a matter of evolution, worked out, not in an hour or a day, but in months and years characterized by toil and ruled by patience."

"I dreamed that stone by stone I reared a sacred fane, a temple, neither pagoda, mosque or church, but loftier, simpler; always open doored to every breath from heaven, and Truth, and Peace, and Love, and Justice came and dwelt therein."

Letting go the unworthy things that meet us, let us live in all true womanliness as to be an inspiration to those whose lives are touched by ours.

Because we realize that all the interests of pharmacy are ours, that *Service* is our watchword, let us all pull together enthusiastically in our efforts for the uplift of pharmacy. I call on you to do your best in this splendid work, to strive for the vision of the scholar, to look at the past with selective discrimination and towards the future with constructive imagination.

Profiting by and rejoicing in the part of women's organizations, let us cross the threshold of the future with confidence and self-control, firm in the hope that moved by the spirit of a broad altruism and unfailing loyalty, the usefulness of our Section has just begun.



MRS. JOHN C. WALLACE, New Castle, Pa.,
First Vice-President Women's Section.



MRS. M. M. GRAY, Chicago, Ill.,
Second Vice-President Women's Section.

"The atmosphere of the Republic is the air of the mountain top and the sunlight and the open fields; her emblem is the eagle and not the bat."

In conclusion I submit the following recommendations for your consideration:

1. That an Outlook Committee be appointed whose duty it shall be to investigate and report on new work for women pharmacists.
2. That one of the duties of the Membership Committee shall be to solicit members for the American Pharmaceutical Association.
3. That one of the duties of the Program Committee shall be to earnestly solicit papers for the annual meeting.
4. That the non-professional women take an active part in the writing of these papers.
5. That a page in the A. Ph. A. JOURNAL be regularly set aside for the Women's Section.

6. That a committee be appointed to act in conjunction with the President in compiling her annual report.
7. That all women pharmacists be recommended to join the American Pharmaceutical Association and attend its annual conventions.
8. That Standing Committees hold office until their successors are elected.
9. That the women's associations in different localities hold one joint meeting annually with the A. Ph. A. Local Branch.
10. That we take an active interest in the project for a permanent building for the American Pharmaceutical Association.
11. That when such a building is realized that the Women's Section have a Bureau of Information in the same.
12. That there be created an endowment for the Women's Section.
13. That we work to interest young women to take up the study of pharmacy and endeavor to find opportunities for young women studying pharmacy to procure practical experience.
14. That a Press Committee be appointed to report the activities of the Section to the Pharmaceutical Press.

ADELAIDE M. GODDING, President.

A paper contributed by Miss Mary L. Creighton, Scio, Ohio, was read by Mrs. C. D. Sullivan, of Nashville, as the author was unable to attend the convention.

WOMEN'S WORK IN THE A. PH. A.

MARY L. CREIGHTON, PH. C., SCIO, OHIO.

The different periods which mark the world's progress have been given various names in history. The present, pharmaceutically speaking, seems to be the age of organization and of opportunities for women.

The Sixtieth Annual Convention of the A. Ph. A. is memorable in the pharmaceutical calendar because of the placing of the Women's Section on the Official Roster, where it is to be thoroughly representative of women in pharmacy, whether the individual connection therewith be active or otherwise. Its officers have heard the challenge,—

“Are you in earnest? Seize this very minute;
What you can do, or think you can, begin it;
Boldness has genius, power and magic in it,”

and have gone enthusiastically to work to prove the right of this new Section to its place of honor as the “keystone” of the arch which has been substantially builded in the past, and which needed this final touch to give it strength and artistic completeness.

Since the active promoters of the Association's interests have disarmed prejudice, and paved the way for the more rapid progress which this federation promises for the future of pharmacy in America, it is due them that we show our appreciation of this recognition; and it will doubtless be very gratifying to the large

number of women who have attended the annual meetings regularly, to find something in the present program strikingly different from the time-honored entertainment features provided for the ladies, who were not supposed to be interested in the discussion of matters of importance to the profession which were scheduled for consideration.

Although the A. Ph. A. always extended them a cordial welcome to its sessions, the women members now feel a deeper sense of responsibility not only as regards the Annual Program, but extending to all the various avenues of usefulness open to those who are ready and willing to perform the tasks which may fall to them.

That women have a place in pharmacy and an important part to play in its activities has long been successfully demonstrated, and it remains for individuals to mark out, each for herself, what line of work she will choose for her share in the upbuilding of professional pharmacy in the future.

Appreciative notices are frequently given in the drug publications of women pharmacists who own and manage successful stores, as well as of the still greater number who are employed as prescriptionists. There are now comparatively few lists of graduates from Colleges of Pharmacy which do not contain the names of one or more young women, and it not infrequently happens that they secure a fair share of the prizes in competitive work.

Women are especially interested in the question of "Shorter Hours and Sunday Rest" for pharmacists generally. Real success does not mean the mere accumulation of wealth, too often at the sacrifice of all that is best and noblest in the individual, but achievement that shall benefit mankind.

Only within recent years have pharmacists, as a class, awakened to the necessity of organized and systematic effort for the betterment of their profession, and because of the fact that only a very small proportion of them have taken an active interest in matters which vitally concern their business, it has of necessity suffered a corresponding loss.

Many members of the craft apparently do not realize the claim which the associated life of pharmacy has upon their support, or are too selfish to acknowledge it; and there may still be found those who are content to leave to others the task of defending their business interests from the passage of unjust and oppressive legislation, and frequently, also, are too parsimonious to give even financial support to such efforts.

"Instead of whistling to the steeds of time
To make them jog on merrily with life's burden,
Like a dead weight they hang upon the wheels."

One of the plain duties of the Women's Section is to assist in ridding pharmacy of this narrowness, and hasten the day when the common interest of all shall be the care of each.

While, thus far, the work has not been easy of accomplishment, the American Pharmaceutical Association is fortunate in having those in its ranks who have kept bravely on when desired results were not yet in sight.

Here, as elsewhere, the "woman's cause is man's," and with the co-operative work of both, a better day is dawning for those who realize that the wiser plan is to work toward the symmetrical development of all their God-given powers,

thus becoming not only better pharmacists and better citizens, but having a broader view of life and its possibilities.

While we may not be able to accomplish such a wonderful transformation in the lives of those about us as did the fabled Wise Man with his unfailing "Secret of Serenity," which enabled him to meet the discouraging and unpleasant circumstances of each day with smiles and perennial cheerfulness, the habit of living on the "sunny side" is not impossible of acquirement, and means much even from the sordid level of dollars and cents.

The pharmacist, of necessity, comes in daily contact with people who are in distress because of the illness or injury of some loved one, in whose behalf his professional skill is sought, and if he can help ever so little to dispel those clouds, just so much is added to the sum total of human happiness, since

"The inner side of every cloud is bright and shining,
And if we turn our clouds about, and always wear them inside out,
They'll show the lining."

There are many organizations of a more or less local character maintained by women who are connected with pharmacy, and such bodies would be greatly strengthened by affiliating with the new Section of the A. Ph. A., thus securing the advantages of concentrated effort by meeting on the higher level of nationwide interests and activities, the object of which is to advance the common weal.

The Women's Section will be glad to welcome representatives from these organizations at its annual meetings, where ways and means may be found for unifying and reducing to usable form the different schemes for pharmaceutical uplift which these various groups of workers will naturally have to suggest.

The State Association meetings offer opportunities for explaining the scope and work of the A. Ph. A., and particularly of the Women's Section, to those women who annually attend these gatherings, but have, perhaps, taken no special interest in the work of the national body because its aims have not been well understood.

While the State Pharmaceutical Societies are very generally represented in the House of Delegates, it seems eminently desirable that a larger percentage of their membership should be enrolled in the A. Ph. A.

The branch idea is no longer in the experimental stage, but has made for itself such an important place in the list of pharmaceutical activities that it now remains to increase the number of these local organizations, in our large cities, as rapidly as possible; and women members can do much to secure a substantial growth in membership. The success which has attended the local branches already formed proves conclusively their value as a means of creating greater professional interest, and in bringing together and harmonizing the varied activities of the drug trade.

Enthusiasm is contagious and, "as one lamp lights another nor grows less," so does the enthusiastic member of any professional organization arouse interest on the part of others who had previously thought the subject of no special importance.

The plan for the establishment of permanent Official Headquarters for the American Pharmaceutical Association is one which must appeal to the entire

membership, and which offers a field for loyal and united efforts toward its early realization on the part of all who possess the true professional spirit and have the interests of the Association at heart.

The Women's Section will doubtless rise to its opportunity, and show that "for such a time as this it has come into the kingdom." The project marks the beginning of a new achievement of vast import at present, and one which is bound to exert a powerful influence for good on the future work of the Association. A matter of prime importance in this connection is the necessity for largely increasing our membership, and this is a work in which the non-professional member may engage with as much success as those who are employed in the active duties of the store.

It is the united charge that wins the battle, each soldier in the line fighting as if victory depended upon his efforts alone, and if the members of the A. Ph. A. will each report for duty in the membership campaign of the next twelve months, the victory is assured.

One source from which, it seems to the writer, the Women's Section should be recruited is that for which we are indebted to such pioneers as Florence Nightingale and Clara Barton, the "Red Cross" and its branches.

The graduate nurse must possess a more or less thorough knowledge of medicines and their therapeutic effects, and be alive to the requirements of her profession. Her mission is

"To soothe and to solace,
To help and to heal
The sick world that leans on her."

and her logical place is next to the physician who prescribes and the pharmacist who dispenses the remedies which she administers.

The non-professional member can also assist in law enforcement as to the proper inspection of food materials, especially if she herself has been appointed to that duty: one which experience has shown women to be fully competent to discharge.

On the principle that whatever benefits the community at large will benefit the pharmacist, there is in the work of civic improvement an opportunity for activity where women may follow the straight path of duty and yet be able to see the curve of beauty. So much has already been accomplished in this direction that it is plainly evident to the casual visitor in a city where the women have taken a hand in public affairs and have been instrumental in the establishment of a "clean-up day."

Whatever tends to diminish human suffering and to make this beautiful world more attractive because she has lived in it, that something is woman's work. And while the new Section is a departure from the beaten path, its members aim to make it so indispensable in the rounding out of the last half of the A. Ph. A. Century that its usefulness as well as its justness can never be questioned.

On motion a vote of thanks was given Miss Creighton for her excellent paper. Delegates to the House of Delegates were appointed by the chair as follows: Miss Bagley, Mrs. Beringer and Miss Farrell.

There being no further business, the meeting was adjourned to Wednesday evening at 8 o'clock.

SECOND SESSION.

The second session was called to order by the President on Wednesday, August 20, at 8 o'clock p. m., in the assembly room of the Hotel Hermitage.

Minutes of the former session were read and approved.

The attention of the chair was called to the fact that Miss Farrell, being already a member of the House of Delegates, was not eligible to represent the Women's Section. Mrs. Whelpley was therefore appointed instead of Miss Farrell.

Papers were presented as follows:

THE EARNING CAPACITY OF THE WOMAN PHARMACIST.

CLARISSA M. ROEHR, UNIVERSITY HOSPITAL, SAN FRANCISCO.

To some this subject may not seem of sufficient importance to warrant its consideration. Within the last few years much attention has been given to conditions under which women work. For the most part these investigations have concerned women in industrial work. However, we cannot deny that the work of women for wages, whether in the industrial, commercial or professional fields, presents many problems. In literature we find page after page written on this timely subject.

In comparing one line of work with another there are many conditions which affect the right to a large or small wage, such as the agreeableness or disagreeableness of the employments, the easiness and cheapness or the difficulty and expense of learning them, the constancy or inconstancy of employment in them, the small or great trust which must be reposed in those who exercise them and the probability or improbability of success in them. Based upon these conditions the work of the pharmacist demands fairly high remuneration.

A short time ago the following statement appeared in one of the leading pharmaceutical journals: "In all lines of work in which women have entered they have caused a lowering of wages. Will the same occur in pharmacy?"

It is true that in many lines of industrial work women are employed at a comparatively low wage. Often they are suddenly forced into the working field, untrained and unskilled, and because of this they are compelled to accept less remuneration. Then again women enter work for a short period with no serious thought of future success nor with a desire to acquire any special training, but merely wishing to earn a little spending money. Often the work is of such a nature as to demand no training. These are the conditions which cause the lowering of wages in the industrial and commercial fields. In comparison, from the time a young man commences his education his future success is constantly held



MISS CLARISSA M. ROEHR,
Third Vice-President
Women's Section.

before him. He is trained systematically and when he starts to work he is fairly well educated and has some training, and is better able to meet the competition of others. In mercantile establishments there seems to be more opportunities for young men to gain training as apprentices than for young women.

When we consider the work of women in the professions we are confronted with entirely different conditions. Professional women are educated and trained workers. We well may apply the term workers for a woman need not be in professional work many months before she discovers that if she wishes to succeed, she must be industrious and must devote the greater part of her life to her profession.

As a rule she can boast of fair education preliminary to her course in a professional school, and when she commences her pharmaceutical work will be found to be a graduate from a college. This applies especially to the woman pharmacist for in medicine and in dentistry a college degree is required prior to registration.

As a class women have been found to possess the objective measures of physical capacity, longevity, vitality and endurance to a marked degree and are also gifted with a remarkable development of sympathy, intuition and insight. These are all qualities indispensable in the modern struggle for recognition in the professional world.

The woman pharmacist occupies a position midway between that held by the industrial worker and that held by the professional worker. When seeking a position in the larger department pharmacies she must meet the competition of saleswomen whom the manager can employ for a third of the amount that she asks, or in the prescription department of the store she often must overcome the prejudice of the manager, who seriously objects to women behind his prescription counter.

My observations as to the earning capacity of women in pharmacy are confined to the western states, principally to California and in the vicinity of San Francisco, its metropolis.

We must not forget that great variation in earning capacity exists in different parts of our country. In one locality what is considered high might be thought excessively low in another. However, there will always be a constant effort to make our remuneration correspond to our standards of life and comforts.

In hospitals the woman pharmacist is welcome and usually receives fair remuneration—the same as any male dispenser would receive. Small hospitals offer as a minimum about \$40 including living expenses. Larger institutions offer from \$65 to \$125. In pharmacies we find it is not uncommon for employers to attempt to economize by offering a woman pharmacist from ten to twenty-five percent less than they would offer a man. We must remember that the blame of this must be placed upon the employer, not upon the woman worker. This plan of economy is not always a successful one. Then, too, we can mention many instances in which men have accepted a remuneration far less than that demanded by the woman pharmacist. In many instances women pharmacists have preferred to refuse position after position because they felt they deserved equal pay for equal work.

In conclusion, I must say that if any one imagines that pharmacy will suffer by the entrance of women in her fold I believe they have pictured conditions wrong-

ly. The woman pharmacist at the present time is earning as much as the average male dispenser and being educated and trained is capable of demanding equal remuneration. If pharmacies would employ more women pharmacists much of the trade that the department store now enjoys would be turned to the smaller pharmacies. Women form over three-fourths of the shoppers and those of the more refined classes will always prefer to buy from a woman. In any line of work, trained, educated women will be helpers which in time to come the world will demand.

WOMAN IN THE PHARMACEUTICAL AND SCIENTIFIC LABORATORY.

LUCY M. DOGGETT, PH. C., CHICAGO, CHEMIST ILLINOIS STATE FOOD COMMISSION.

This is the age of the emancipation of woman, when, by the aid of man, she is striking off the shackles of custom and prejudice, and rejoicing in her newborn freedom; no longer the servant, chattel or plaything, but man's partner and companion, she is entering all lines of work and all professions.

Remove woman out of trade and we would see the wheels of commerce paralyzed, so largely has she entered into all lines.

The medical and pharmaceutical professions are alike open to her and await her successful achievement. It has long since been proven that woman can attain the theoretical knowledge in these various lines of endeavor, but whether she will achieve practical results remains to be seen. There is no reason why she should not if she so desires. I prophesy her success. In the meantime she should be holding among the highest positions in these professions.

This calls for much study, unrelenting labor and research work, and a large amount of routine in general, but she will be equal to the demand. Madam Curie is a notable illustration of the progress of woman in the last century in scientific lines.

There are many women all over the United States today who are isolating themselves and concentrating their energies with man in the routine work of the various laboratories.

Woman should be peculiarly adapted to the pharmaceutical, the chemical, the electrical, the astronomical and the manufacturing food and drug laboratories.

The following is not a criticism, but the result of my observations of woman in the various lines of endeavor. Man and woman are distinctly different in their methods of activity. There is an initial difference between the feminine and masculine mind. Each grasps matters differently. From time immemorial woman has from circumstance had to deal with details and matters which require less concentration. She therefore excels man in detail work and has not his powers of concentration. Man largely deals in generalizations and hence his vision is wider due to his centuries of contact with the outside world.

These diametrically opposite traits of character are both necessary in the scientific laboratories. Woman is too prone to let her own personal ideas influence her judgment in matters of importance, and in dealing with matters on

the spur of the moment she acts from intuition. She has not been in the business world long enough, and it takes her longer to see all sides of a question. Broad mindedness will now develop in our future prospect of greater contact with the outside world. Woman has the faculty of accumulating much detail knowledge, but she has not yet acquired the art of generalization. To become successful she must remember the larger matters and become accustomed to picking up the details on short order.

Men study incessantly. We hear of our men specialists studying for years on a subject—and hence our true specialists. Woman uses a profession as a rule as a stepping-stone between girlhood and matrimony. Hence she seldom has been in the habit of mastering the subject thoroughly.

My advise to woman is to learn carefully the practical side of business.

Woman must remember that she is not "running the whole business" as she does the home. Man more easily recognizes a head and goes straight to his work and accomplishes more. Woman has been queen of all she surveyed so long that she sometimes forgets she is not monopolizing all departments of the business in which she is employed.

Woman as a class is superior to man in her motive and assiduity. She feels more keenly than man her responsibility, and is more conscientious. She sees to it that matters have a higher tone and aspect, due to the maternal instinct of peculiar care which is intuitively hers in rearing the young and being associated with them in their formative period.

The high-minded woman (and she generally belongs to this class who spend years of study preparing for the duties of a scientific laboratory), has a refining influence on the opposite sex.

Woman entered the social field first equal with man. Then her horizon broadened and she permeated to the heart of the business world. And now by man's sanction she is entering the political sphere, where she has the opportunity of expressing her ideas—and this expression will affect efficaciously her larger entrance into the affairs of humanity. Governments are simply a part of a great housekeeping scheme, and the feminine mind has much of good to impart for the improvement of the governments.

Man's world is commercial—woman's is ideal. Today in laboratories we need both the commercial and the idealistic. The commercial needs to be idealized to an extent that justice may prevail.

THE FIELD FOR WOMEN PHARMACISTS IN HOSPITALS.

CHARLOTTE E. STIMSON, PH. G., PHARMACIST STATE HOSPITAL, ELGIN, ILL.

Women pharmacists are particularly adapted to fill the positions in the hospital pharmacies. The pharmacy or drug room is often one of the show places of the institution and under the supervision of a woman it usually is in more perfect order, is more scrupulously clean and in better "showing" condition than when under the care of one of the sterner sex, many of whom are not so apt to pay heed to the details which tend to give the pharmacy not only the professional air,

but that touch of "hominess" which lends to that department the appearance of being a live one.

Then taking the viewpoint wherein it benefits the worker, the hours are shorter, the pharmacist having the evenings and usually Sundays. The work is wholly of a professional nature, no side lines being indulged in. However, if one is looking for a position with nothing to do it is well not to choose one in a hospital pharmacy, for most hospitals maintain only one pharmacist and that one is manager, buyer, prescriptionist—everything merged in one capable person, for that one needs must be capable to fill this multi position satisfactorily.

The demand for women pharmacists in the hospitals is increasing—the demand is greater than the supply. The managers of these institutions are looking for good workers and are coming to realize that women workers in these positions are most satisfactory. May the women never disappoint them!

The preceding papers of Miss Doggett and Miss Stimson were read by Mrs. Gray, the authors not being able to attend the convention. A vote of thanks was given these ladies for their interest in contributing to the program.

The Committee on Constitution and By-laws presented its report and submitted a suggested constitution, which was thoroughly discussed in detail. The result was the adoption of the following:

CONSTITUTION AND BY-LAWS OF THE WOMEN'S SECTION OF THE AMERICAN
PHARMACEUTICAL ASSOCIATION.

Section One. Name and Object.

ARTICLE I. This Section shall be known as the Women's Section of the American Pharmaceutical Association.

ART. II. The object of this Section shall be to emphasize the right and capability of women to engage in pharmaceutical pursuits as a means of livelihood; to unite the women employed in pharmaceutical pursuits for mutual encouragement and assistance; to labor for the improvement of legislation regulating the registration as pharmacists of women employed in the practice of pharmacy in hospitals and other public institutions; to unite the women members of the A. Ph. A. and the women of the families of members of the A. Ph. A. in a section for social purposes, and to cooperate in the promotion of the general progress of pharmacy and of the American Pharmaceutical Association.

Section Two. Membership.

ARTICLE I. Members of this Section shall consist of the women who are regular members in good standing of the A. Ph. A., and those who are of the families of regular members in good standing of the Association.

ART. II. All members of the Section shall be eligible to office, to vote for officers, and to vote upon other questions.

Section Three. Officers.

ARTICLE I. The officers shall consist of a President, Honorary President, three vice-Presidents, Secretary-Treasurer and a Historian, all of whom shall be

elected by ballot annually, and shall hold their respective offices for one year and until their successors shall have been elected and qualified.

ART. II. It shall be the duty of the President to preside at the annual meeting, to appoint all special committees not otherwise provided for, to see that the Constitution and By-Laws are observed, and to perform such additional duties as may be delegated to her by the Section or by the Executive Committee. The duties of the Honorary President shall be such as may be from time to time conferred by the Section or by the Executive Committee.

It shall be the duty of the Vice-Presidents to preside in their order, in the absence of the President, and to perform such additional duties as may be imposed from time to time by the Section or by the Executive Committee.

The Secretary shall keep the minutes of the meeting and the records of the Section, shall conduct the general correspondence, notify all committees of their appointment and of any special duties which may be imposed, and shall also notify officers not present at the time of their election, of their election and duties.

The duty of the Treasurer shall be to receive and keep an account of the funds of the Section, and to pay them out on the order of the Secretary, countersigned by the President.

It shall be the duty of the Historian to record the progress and activities of women engaged in pharmaceutical pursuits, to secure data of the names and number of women engaged in such pursuits in the several states, and to present a report of the matter accumulated at each annual meeting of the Section.

Section Four. Standing Committees.

ARTICLE I. The Executive Committee and Committee on Membership shall constitute the standing committees of the Section.

The Executive Committee shall consist of the President and Secretary ex officio, and three elected members who shall hold their offices for three years. At the first election one member shall be elected for one year, one for two years, and one for three years. Thereafter one member shall be elected annually to serve for three years.

It shall be the duty of the Executive Committee to direct the affairs of the Section in the interim between the annual meetings, to arrange the program for the annual meetings, and to perform such additional duties as may be imposed upon them by the Section. The Executive Committee shall have authority to conduct its business by mail, and questions submitted for vote by mail shall not require a second. All acts of the Executive Committee shall be subject to revision by the Section.

The Membership Committee shall consist of five members of the Section, one of whom shall be the Secretary, ex officio, and four who shall be elected at the annual meeting.

The members of all special committees shall be appointed by the President, unless the Section shall prefer to elect, and the person first named on each committee shall be chairman of the same.

Section Five. Meetings.

ARTICLE I. The Section shall hold one regular annual meeting during the annual meeting of the A. Ph. A., and such additional meetings or sessions as the Section shall determine.

Section Six. Amendments.

ARTICLE I. Amendments to this Constitution shall be proposed in writing, at one session and balloted upon at a subsequent session, when upon receiving the vote of two-thirds of the members present they shall become a part of the Constitution.

BY-LAWS.

ARTICLE I. The Nominating Committee shall consist of five members who shall be named by the President early in the opening session of the annual meeting, which committee shall report at the next session, and the nominees shall be balloted upon at the last session. Additional nominations may be added from the floor, and a majority of all votes cast shall be necessary to an election. Officers elected shall be installed at the last session.

ART. II. At the time of election the President shall also name two members of the Section to act as tellers to canvass the ballots cast and to report the result of the same.

ART. III. The presence of seven members shall be necessary to a quorum at any regular or called meetings of the Section.

ART. IV. Special sessions of the Section may be called by the President in her discretion, and shall be called by her upon written request of the Executive Committee, or upon the written request of any five members of the Section.

ART. V. Except as herein provided, the proceedings of the Section shall be governed by the general rules of parliamentary law as stated in Roberts' Rules of Order.

ART. VI. These By-Laws may be amended in the same manner as provided for amendment to the Constitution.

Adopted by the Women's Section, August 20, 1913.

The following committees were appointed by the Chair:

Resolutions—Miss Bagley, Mrs. Ruddiman, Mrs. Day.

Nominations—Miss Jenkins, Mrs. Thompson, Mrs. Timmons, Mrs. Lindvall, Mrs. Eldred.

The Executive Committee report, submitted by its Chairman, was read by the Secretary, as follows:

REPORT OF THE EXECUTIVE COMMITTEE.

MRS. O. F. CLAUS, ST. LOUIS, CHAIRMAN.

Madam President and Members of the Women's Section of the American Pharmaceutical Association:

I assure you it was indeed a surprise when I was notified of my appointment as Chairman of the Executive Committee of this Section of the A. Ph. A.

This office, as you are all aware, is such an important one that I felt I could

hardly do justice to it, as the principal business of the Association is usually brought before the Executive Committee and finally referred to the association in general for action, therefore I sincerely hope that no mistake was made in your appointment.

This branch of the American Pharmaceutical Association will, in my opinion, be a very valuable adjunct to the parent organization, because there are many ways in which we can be of benefit to the Association, among them bringing new members to the parent body and by accompanying the male members to the various meetings create more enthusiasm, and in many other ways.

I would suggest to the members present that if they have anything of import-



MRS. O. F. CLAUS, St. Louis, Mo.,
Chairman Executive Committee, Women's
Section, A. Ph. A.

ance to present to the Association they do so at their earliest convenience so that the Executive Committee can pass on the same and bring it before the Section at the next meeting.

I sincerely trust that the women present at this meeting will strive to attend the meetings in future from year to year, thereby letting the good work go on, and also that as many new members be invited as possible, so that when the present officers' terms expire there may be no cessation in the work outlined, which has had such a splendid start.

I am certain that the male contingent of the A. Ph. A. will look toward the Women's Section for help in various ways, and therefore, Madam President and members, we must strive to lend a helping hand, just as we have done in the homes from whence we came.

In conclusion, allow me to say that I am deeply grateful for the honor you have bestowed upon me, and when my term of office expires I shall deem it a great privilege to assist my successor to the best of my ability.

MRS. O. F. CLAUS, Chairman.

The Membership Committee submitted the following report:

REPORT OF MEMBERSHIP COMMITTEE OF THE WOMEN'S SECTION.

Three of the members of your Committee on Membership were also appointed to the Sub-Committee on Women Members of the general Membership Committee of the American Pharmaceutical Association, and to avoid a duplication of work it was decided to combine the work of the two committees.

It is through its Committee on Membership that the Women's Section can best serve the interests of the A. Ph. A. In addition to the individual work done by the members of the combined committees, a form letter was sent to a list of 500 women pharmacists, urging them to join the A. Ph. A. and enclosing a reprint of the explanatory article which appeared in the JOURNAL for May. This letter, a copy of which follows, was processed on a letterhead bearing the names of both committees.

On behalf of the Membership Committees for Women Members, we invite you to join the American Pharmaceutical Association.

You know, of course, in a general way what the A. Ph. A. is, but you may not be sufficiently posted on the details of the work to induce you to become a member.

The A. Ph. A. is recognized at home and abroad as the leading professional organization of pharmacy of the world. For sixty-one years its efforts have been devoted to pharmaceutical advancement, and history will show that every noteworthy achievement of pharmacy has had its inception in and received the support of the A. Ph. A. At present it is making greater strides than ever before, and every woman in pharmacy should add her influence to the cause by affiliating with this organization.

The A. Ph. A. publishes the National Formulary and is largely interested in and responsible for the decennial revision of the United States Pharmacopœia.

Its policies are broad, fair and intelligent; its work covers the professional, commercial, theoretical and practical sides of pharmacy.

Years ago it opened wide its doors to any women who sought admission; in its policy of progression it now proposes to seek out and invite the women of the profession to unite with it.

The Women's Section founded at the last meeting, is described to some extent in the enclosed reprint.

The membership fee of \$5.00 per year also includes a subscription to the JOURNAL and such other annual publications as may be issued.

We ask as an especial favor that you will give this matter careful consideration and let us hear from you. We are sincere in believing that you will never regret becoming a member of the American Pharmaceutical Association.

Write your nearest committee for any further information.

Sincerely yours,

SUB-COMMITTEE ON WOMEN MEMBERS,
Membership Committee of the Women's Section.

The endless detail involved in compiling this list of names induced the committee to preserve this information on a card index, which is submitted as a part of this report.

The experience gained in this work has led your committee to recommend that particular thought be given to devising a systematic working plan for the incoming Committee on Membership.

While only about 50 of the 500 letters were returned, addresses gleaned from such sources as your committee had at hand, namely, drug journals, board of

pharmacy reports, college catalogues, etc., are more or less faulty, and the only means which suggests itself at this time to secure authentic addresses and keep the index up to the moment, is to secure the cooperation of board secretaries, college deans, secretaries of state associations, secretaries of local branches, etc. A letter addressed to these various organizations would probably be all that is necessary to secure this cooperation. To this end your committee suggests that a letter be addressed to the National Association of Boards of Pharmacy and the Conference of Pharmaceutical Faculties now in session in this hotel.

The territory of the entire country is too large for a small committee to canvass thoroughly, and for this year at least, your committee would recommend the appointment of a large committee, well distributed as to locality and thoroughly organized, having possibly a chairman and secretary; that this committee be appointed early in order that the members may be given an opportunity to confer on plans for the coming year.

..

ANNA G. BAGLEY.

ZADA M. COOPER.

M. M. GRAY.

There being no further business, the meeting was adjourned to Friday at 9 p. m.

THIRD SESSION.

The third session was called to order in the loggia of the Hotel Hermitage by the President, Friday, August 22, at 9 p. m.

The program was opened by a song by Mrs. Evans, of Nashville.

Mrs. C. D. Sullivan, of Nashville, delivered the following address:

GREETING TO THE WOMEN'S SECTION.

MRS. C. D. SULLIVAN, NASHVILLE.

Madam President, Ladies and Gentlemen:

I deem it a rare privilege to be able to speak a word or two to this distinguished body, and wish to assure the ladies who requested this service of me, that I consider it an honor that any one might be proud to accept.

I wish first to congratulate you of the Women's Section of this magnificent organization on your splendid beginning, and to bid you God speed.

In banding yourselves together with a purpose, you are contributing to the fulfillment of Matthew Arnold's prophecy when he said that "If the time ever comes when women shall come together, simply and purely for the good and benefit of mankind, it will be a power such as the world has never dreamed."

One in touch, even in a small way, with the wonderful and powerful women's organizations of our country can see that this power is now being keenly felt, and that it is steadily gaining in strength and importance, that woman has become a vital and growing force in the development and progress of our country.

I am glad to number myself among the million earnest, thoughtful women of our country, who stand bound together by the slender cord of club fraternities,

laboring together for our women and children, for the conservation of the home, for better equipment, simpler furnishings and more sanitary conditions in the home, for pure and clean food, that the home-keeper may conserve the health of her household.

Laboring for the conservation of the child. In work, through child labor and compulsory education laws. In play, through effective efforts for supervised play-grounds, well-equipped parks and baths, and for the use of schools as recreation centers. In homes, realizing that upon the sanitary condition under which a child is reared, depend largely his future usefulness as a citizen. In schools, pressing medical and nursing inspection, urging summer schools and schools for the defectives and delinquents, and for the moral as well as the mental and physical training of the child, realizing that the moral training is a necessary part of the training for citizenship.

Indeed, the child of today, particularly the less fortunate child, may regard the modern club woman as a real benefactress, for to her is due the credit of the country having at least awakened to the realization of the fact that our children, *our babies*, are a valuable asset, are *really* worth while, worth offering prizes upon—as well as our live stock and our farm and garden products.

Tennessee has fallen into line and under the management of the Woman's Department of our State Fair we are to have a great Better Babies Contest. Handsome prizes are offered and Mrs. Anna Steese Richardson, of the Better Babies Bureau of the Woman's Home Companion, is coming here to assist in conducting the contest.

The advantages of organization among women have long since been conceded beyond discussion.

Our club women have gained clearness of thought and definiteness of purpose, they have learned that self-efficiency and self-improvement come through service to others, that team work is the work that counts.

They have learned not to bestow their offices lightly, as a mere honor, but to choose as their leaders, those who are able to get a vision of the future and to seize the opportunity of the present.

They have learned to differ amicably and to think broadly and soundly, and best of all, they have learned the importance of the subordination of the personal, and when the members of any organization are willing to sacrifice the individual interest for that of the cause, they have made a decided step forward, in promoting the best interests of the organization.

If you are in doubt as to how you can help in carrying on the work of your organization, what you can do toward making better the conditions under which men, women and children live and work, study for a while the report of your city health officer. See how many deaths occurred in your city last year from purely preventable diseases, interest yourself in the source of these preventable diseases, and see if you do not find something to do.

Visit your institutions for the blind and see how many children there are going through life in darkness, when it might have been prevented.

Visit your juvenile court, get in touch with the little offenders, trace out the sources of their little troubles, and see if you do not find something to do.

Study the laws of your state regarding women and children, your child labor

laws, your compulsory education laws, your laws regulating the working hours for women, and see if your women and children are properly safeguarded under the laws of your state.

Visit your parks and playgrounds and see that they are properly supervised.

Is your community aroused on the question of Pure Food? The good food movement is not merely a passing fad, but a steady current, and will never stop till our people are fed honestly and wisely.

I mention these as only a few of the ways in which we may serve our fellow beings, for perhaps in this entire audience, there is not a person who is not anxious to render some service to his less fortunate brothers. The day of the "idle rich" has passed, and the time is not far distant when the man or woman, regardless of the size of their income, who has not a definite purpose in life, will be regarded as an excrescence upon society.

I bespeak for your Section unlimited usefulness, for indeed, you have an unlimited field. And in bidding you adieu, I am impressed that as a noble guest fills the house with a radiance which is never lost, so has this convention filled the hearts of our people with an influence and an inspiration which will widen, deepen and sweeten our own lives, and in turn make Nashville better for your having been.

Following this address the Section was favored with a song by Mrs. Evans, of Nashville.

REPORT OF THE NOMINATING COMMITTEE.

The Nominating Committee reported its selection of officers for the coming year:

President—Mrs. John G. Godding, Mass.

First Vice-President—Mrs. John C. Wallace, Pa.

Second Vice-President—M. M. Gray, Ill.

Treasurer—Mrs. H. M. Whelpley, Mo.

Secretary—Miss Anna G. Bagley, Ohio.

Historian—Mrs. John Culley, Utah.

Executive Committee—Mrs. O. F. Claus, Mo., one year; Mrs. J. O. Burge, Tenn., two years; Miss Zada M. Cooper, Iowa, three years.

On motion the Secretary was instructed to cast the ballot for these officers, which was done, and they were declared elected.

Mrs. Thompson installed the officers, after which Miss Cooper read the following paper:

ASSOCIATION AND OPPORTUNITY.

ZADA M. COOPER, PH. G., IOWA CITY, IA., IOWA COLLEGE OF PHARMACY.

Perhaps all the general reasons for organized effort along any line are applicable to the newest Section of the American Pharmaceutical Association. We are willing to concede that association with men and women is essential to our sane and normal development, though, if carried too far, as Robert Hitchens once said, "it makes us know crowds, not individuals." As it is possible to have too extended social relations as individuals, so it is doubtless true that one can

belong to too many organizations and consequently spread one's energies over too broad a field. Carrying the analogy still further, any cause may suffer from over-organization or too complex a system of organization. However, I can see no objection to adding a Women's Section to the American Pharmaceutical Association. On the contrary, there are many good reasons for such an addition, and it has almost unlimited opportunity.

The old saying "In union there is strength," may be trite, but there is not one of you who has not known personally of something worth while accomplished by organized effort that would have been utterly impossible if attempted by people working individually.

Most organizations are made up of members having similar tastes or striving for similar ends; burdened with the same cares and brightened by the same hopes. Surely with a druggist in every family represented here you have much in common. You know the questions that are engaging the attention of pharmacists as well as it is possible to know them and not be pharmacists yourselves. Add to your number the few of us who are pharmacists and we can at least have a common purpose; we can strive toward the same end.

Every woman connected in any way with the American Pharmaceutical Association should feel a duty to this Section. We cannot rightly live to ourselves. We owe a debt of service to the world; the claim for public service falls on women as well as men, though perhaps not equally, since the largest part of woman's work is done when she cares for her family. There could be no greater work than to bring her children to manhood or womanhood prepared as they should be for the responsibilities they must assume, but that is not enough.

It seems to me that there are many of the questions with which pharmacy is concerned today in which women can do work of real value. Because we are different from men we bring to any subject a different mental attitude; our viewpoint is different, and this very difference of attitude and method of approach may aid in solving problems hitherto unsolved. Among these questions are shorter hours, Sunday closing, the liquor and narcotic business, objectionable advertising, either show window or otherwise. The primary object in whatever may be undertaken should be the good of the Association and the betterment of the profession, the benefit resulting to ourselves being entirely secondary.

We should know each other better. We women who are pharmacists want to know the wives of our fellow druggists; we want your help and sympathy; we want you to believe that it takes more than difference in education to alter a woman, that, though our work differs from yours, we are women still, and we hope no less womanly. Nevertheless, our desire for your friendship is an insufficient reason, perhaps, for the existence of this Section, because it is the greater good of the whole we should consider.

I have no definite plans of what line of work should be attempted, but a few



MISS ZADA M. COOPER,
Member Executive Com-
mittee Women's Section.

ideas have recurred to me again and again in considering what might be our work. I was much impressed by a statement made by Professor Ladd, of North Dakota, in a paper which he read at the annual meeting of the Iowa Pharmaceutical Association last month. His subject was the question of fake prescription nostrums and patent medicines, and he said that in his state where so much had been done to reduce if not eliminate the evil, an active campaign of education had been carried on and that one of the most effective means had been the women's clubs. The results had been so good that he did not hesitate to say that at the next session of their legislature they will be enabled to enact a law restricting the sale of prescription nostrums and patent medicines to those passed upon by competent authority and shown to be of therapeutic value in those diseases for which they are recommended. If the women's clubs of North Dakota were a factor in an educational campaign that will be able to bring about such a reform, such means are not to be despised.

It is probably safe to say that each woman here belongs to some club, some of you to several. Even though some of these clubs have some specific line of work or study, I believe it would be possible to bring to them for consideration any message that this Association wished to present. It would be a sort of propaganda movement. It need not be the elimination of patent medicines, but anything that this Association saw fit to take up, anything pharmaceutical upon which the public needs enlightenment.

It isn't the public alone that needs to be educated. Some druggists need reforming in a general way. I believe women might make drug stores pretty much what they should be, though probably the proprietor's principles might remain unchanged. Every pharmacist who has given it thought knows that a large part of his business is done with women. I believe it is estimated that 85 percent of all general merchandise sold is purchased by women. I shouldn't be surprised if something like the same thing is true of the sales in the average pharmacy. At any rate, the proportion is sufficiently large to inspire respect for the opinion of the women of any community.

I have not gone so far as to think out how the clubs of any city could reach the druggists, but it is possible that sometimes it would only be necessary to request their compliance with any principles adopted. Perhaps the passing of resolutions which could reach the public through the press and the druggists themselves by mail, might be effective. In some cases, it might be necessary to resort to severer measures. I am not certain that a boycott would be justified unless it be in extreme cases, but I am pretty sure that would not be ignored. Most any business man, however lacking in principle, would defer to public opinion or the desire of the women of his locality rather than have his sales materially reduced. I think it is worth our consideration.

The President then called for the report of the Committee on Resolutions, which was as follows:

REPORT OF COMMITTEE ON RESOLUTIONS.

The chairman was unable to get a meeting of the committee and has, therefore, no report to make, except to request that a vote of thanks be extended to the druggists of Nashville and their ladies for the splendid entertainment they have

accorded us; to the ladies who have so generously contributed music and papers to our program; to the Nashville press for the liberal space devoted to our meetings and for the very intelligent reports published; to the absent ones who have shown interest in our work by contributing papers; to the A. Ph. A. for its cordial welcome and support; and that our appreciation of all these favors be expressed in a rising vote of thanks.

ANNA G. BAGLEY, Chairman.

The report was accepted and a rising vote of thanks extended as suggested in the report.

Adjournment was taken with the audience singing. "Blest Be the Tie That Binds," led by Mrs. Evans.

ANNA G. BAGLEY, Secretary.

SUCCESSFUL PROPRIETARIES.

We read again and again of the money made in patent medicines. In fact, the undiscerning public holds that the patent medicine road is the sure road to wealth. But we are not told of the thousands of failures in such ventures. Their story is told only in the dull pages of the annual inventory, where they are, or should be, gradually written off as a dead loss to the retail druggist. Even among the proprietaries which are considered successful there are but few which are really large sellers. An interesting light is thrown on this question by the evidence presented before the parliamentary committee on proprietary medicines now sitting in London. One of the directors of "Boots Limited," a corporation which controls 534 retail drug stores throughout Great Britain, testified that out of 269 articles listed by the British Medical Association as either "secret" or "non-secret" remedies, 121 have no sale at all in the Boots stores, 57 have an intermittent sale, 12 sell fairly well, 23 sell well, 25 sell very well, and 30 have a very large sale. It will be seen that out of 269 remedies only 55 sell very well. This is a small number of successes out of the thousands of proprietary medicines that have been introduced in Great Britain.—*American Druggist*.

Contributed and Selected

A PROCESS OF ASSAY FOR SANGUINARIA.*

V. O. HOMERBERG, P. D., AND G. M. BERINGER, JR., P. D.

Often, the mind of human science travels in a mental maze, taking its turns by guess or luck, blindly ignoring the pointing finger on nature's sign-post. To most, if not all of her riddles nature herself furnishes the key. The assay of *Sanguinaria Canadensis*, and the problems involved in the search for that assay, furnish striking proofs of these two propositions. Few alkaloidal assays present so many difficulties.

The strong colors of the salts of the principal alkaloids preclude the use of any volumetric process, as no indicator and no end reaction would be available in their presence. In the separation of the alkaloids from the drug, the soluble alkalies—soda, potash and ammonia—precipitate the coloring matter along with the alkaloids, which coloring matter later forms troublesome emulsions with the solvents. Kieselguhr and kaolin were tried for removing the coloring matter, but were found to retain considerable of the alkaloids. Finally, lime was found to liberate the alkaloids, and, at the same time retain the coloring matter.

Many of the volatile solvents, upon evaporation, leave the dissolved sanguinaria alkaloids decidedly colored. This is true especially of acetic ether and chloroform, traces of these solvents being apparently decomposed, thus giving enough free acids to salify a portion of the alkaloids. Chloroform is evidently the best solvent for the mixed alkaloids, but cannot be used upon this account. The next best solvent seems to be benzol, but it takes up large quantities of coloring matter. The only two solvents free from this objection are benzin and ether. Benzin, however, as shown by LaWall (*Am. Jr. Ph.*, '96, p. 305, et seq.) dissolves only a part of the alkaloids. Ether dissolves them all, but is required to be used in larger amount than benzol because of its weaker solvent action. The final solution of this problem was the use of ether for the first extraction, thus leaving behind practically all of the coloring matter, and the use of benzol for the final extraction, thus giving a smaller bulk for evaporation.

The greatest trouble is met, however, in trying to extract the alkaloids from the ethereal solutions by means of acid solutions. The mineral acids, even in dilute solutions, precipitate a large part of the alkaloids. It has been this, no doubt, which has rendered most previously published assays uncertain and unreliable. The alkaloids evidently existed in combination in the plant. With what natural acids are they combined? Almost thirty years ago, L. C. Hopp (*Am. Jr. Ph.*, '75, p. 183, et seq.) demonstrated by simple but conclusive tests that those

*Presented to the N. J. Pharmaceutical Association, June 1913.

acids were citric and malic acids. But, the question arose, would not the volatile solvents extract some of the sodium citrate formed upon neutralization of the acid solutions with sodium hydroxide? In order to determine this, sodium citrate was treated in separate portions with ether and benzol. Upon evaporation of the filtered solvent in a platinum basin no weighable residue was left in the case of benzol, and only a slight residue in the case of ether. Hence, using the two solvents in the order finally adopted in the perfected assay, the results were not vitiated by the presence of citrates.

Many experiments and scores of unsuccessful assays were necessary to determine the facts given above. From them the following assay was evolved:

Gradually add seven cubic centimeters of water to two grams of air-slaked lime contained in a suitable dish. To the magma thus formed, add two grams of finely powdered sanguinaria and incorporate thoroughly. Evaporate on a water bath to dryness. Transfer the dry material, after powdering, to a small percolator, the orifice of which has been closed with a pledget of paper pulp, moistened with a mixture of equal volumes of ether and benzol. Rinse the dish with a few cubic centimeters of the same ether-benzol mixture and pour the rinsings upon the material contained in the percolator. Continue the percolation by the addition of small portions of the ether-benzol mixture from time to time until a drop of the percolate, evaporated in a watch crystal and redissolved by the addition of one drop of diluted hydrochloric acid, no longer gives a precipitate with Mayer's reagent. Transfer the percolate to a separatory funnel and wash with separate portions of solution of citric acid (5%) of 25 cc., 15 cc. and 10 cc. respectively. Continue the treatment with portions of 5 cc. of the acid solution till one drop of the acid solution shows no precipitate with Mayer's reagent.* Transfer the mixed acid solutions to a separatory funnel, add 15 cc. of benzol and afterward sufficient sodium hydroxide solution to make the mixture alkaline to litmus. Shake the mixture thoroughly. Separate and filter the benzol layer into a tared beaker. Repeat the operation with two portions of 10 cc. each of benzol, mixing the separated and filtered benzol solutions with that first obtained. Evaporate the mixed solutions, on a water-bath, to dryness. Cool the beaker and residue in a desiccator and weigh. The commercial drug at present assays from 3-4% total alkaloid.

For assaying the Tincture and Fluidextract, take 20 cc. and 2 cc. respectively and evaporate the alcohol on a water-bath; mix with the lime magma and proceed as above.

The residues given by this method are practically white and crystalline. Results are remarkably constant as compared with previous assays, the weights rarely varying more than .001 in assaying the same sample.

NOTE.—The work embodied in this paper was carried out by Victor O. Homerberg and presented by him in a thesis, for his degree, before the Philadelphia College of Pharmacy. His associate has merely rewritten this portion for presentation to this Association.

G. M. B., JR.

*Total extraction of alkaloid is generally shown by absence of color in the Citric Acid Solution.

WHAT IS THE PROPER TIME FOR THE COLLECTION OF SANGUINARIA?

V. O. HOMERBERG, P. D., AND G. M. BERINGER, JR., P. D.

The U. S. P. directs that sanguinaria be collected after the death of the foliage. In order to determine if this were the proper time, a number of samples of the rhizome were collected at various times from May—just after flowering—to August—just before the leaves began to die.

The assays of these, as given in the appended table, show that, for maximum alkaloidal content, the time directed in the U. S. P. is the worst that could possibly be selected. It will be noted that the alkaloidal content decreases from 6.5%, on May 18th, to 3%, on July 6th, after which it remains practically stationary. The figures for loss in weight on air drying the fresh drug show a steady decrease in moisture content as the season advances.

ASSAY OF COMMERCIAL DRUG.

Sanguinaria No. 1	3.17% total mixed alkaloids.
Sanguinaria No. 2	4.05% total mixed alkaloids.
Sanguinaria No. 3	3.12% total mixed alkaloids.

ASSAY OF COLLECTED SAMPLES OF SANGUINARIA.

Time of Collection	Percent total alkaloids after air-drying	Percent loss on air-drying (moisture)
5/12/12	6.50	82.51
5/23/12	5.55	80.75
6/7/12	4.60	78.75
6/21/12	3.40	74.56
7/6/12	3.00	75.05
7/19/12	3.95	73.26
8/2/12	3.90	72.31
8/29/12	3.95	70.28

These results would indicate that the alkaloidal principles are not products essential to the nourishment of the plant, but rather in the nature of waste products of plant metabolism. Hence, these principles are not increased in amount and stored up, like the resins, gums and starches, for a period of rest. The alkaloidal percentage is, in fact, reduced by the increase of the latter classes of substances and the consequent decrease in the amount of water during the less active period of plant life.

If this is the case the rhizome and root drugs which owe their activity to alkaloidal constituents should be collected at the time of greatest plant activity—i. e., about or immediately after flowering. That such is the case with sanguinaria, the figures here given, indicate. No doubt similar facts will be found to obtain in the case of other drugs of a like character. The subject is presented as one worthy of further investigation. We believe that the U. S. P. statement regarding the time of collecting sanguinaria should be modified, because it is not the time at which the commercial drug is collected, nor is it the time of greatest alkaloidal content.

NOTE.—The work embodied in this paper was carried out by Victor O. Homerberg and presented by him in a thesis, for his degree, before the Philadelphia College of Pharmacy.
G. M. B., JR.

SOME PRESCRIPTION KINKS AND HINTS.*

GEORGE M. BERINGER, JR.

The pharmacist might, with profit, stimulate the physicians of his neighborhood to prescribe various coatings for extemporaneously prepared pills. A coating that is easily applied, and, at the same time, is distinctive and unusual, is plumbago. The pills are simply rolled in finely powdered graphite. They may, afterward, be highly polished by rolling on a piece of cotton flannel or of felt.

Physicians are coming more and more to order ointments dispensed in collapsible tubes. The usual methods of filling the tubes are by means of a spatula or by melting and pouring the ointment into the tube before the ointment has quite solidified. The first of these is rather troublesome and "messy." The second cannot be used in very many cases without having an uneven admixture of the ingredients and an ointment far from smooth. The following has been found a convenient, clean and rapid method: The prepared ointment is placed in a thin streak along the center of a piece of suitable paper (preferably parchmentized) about $1\frac{1}{4}$ times the length of the tube to be filled and about three or four times the diameter of the tube, in such a manner that the paper and ointment may be rolled into a pipe of slightly smaller diameter than the tube. This pipe is inserted into the tube and the outer end of the paper folded over. The folding-over is continued and the paper withdrawn as the ointment is expressed into the tube. In this way the tube is filled as solidly as by a machine and with little or no loss or smearing.

It has been found difficult to powder Chloretone finely enough to make a smooth ointment. It becomes so electrified upon trituration that it sticks to mortars, pestles and spatulas and, when scraped off, flies in every direction excepting the one intended. As it was prescribed in an ointment, for rectal injection, it was not thought advisable to use alcohol or similar solvents to facilitate its incorporation. The substance can, however, be made into a very smooth paste by rubbing upon a tile with a few drops of expressed oil of almond, before incorporating with the other ingredients.

Scarlet Red Ointment is frequently prescribed in such a manner as to leave the selection of the base for its incorporation to the judgment of the dispenser. Petrolatum is the base most frequently used. The dye, however, is nearly insoluble in this medium. It would seem reasonable to suppose that particles of a substance coated with another substance in which they were insoluble would have little or no action upon the tissues with which they were brought in contact. The dye is soluble in benzoinated lard and the ointment so made is certainly smoother and probably more efficient.

A prescription was received for soft elastic capsules of Oil of Erigeron, each containing three or four drops. It was necessary to add some fixed oil as a diluent in order to fill the capsules satisfactorily. Olive oil, the usual diluent in such cases, formed a cloudy mixture, and, with an old sample of erigeron oil,

*Presented to the N. J. Pharmaceutical Association, June 1913.

even threw out resinous masses. Expressed almond oil did the same. Castor oil made a very clear and brilliant solution and was used with satisfaction.

The following prescription for an injection seems simple, but illustrates how a very slight difference in manipulation may make considerable improvement in the finished product.

R Tr. opii, fl. dr. 1.
Tr. catechu co., fl. dr. 2.
Plumbi acetatis, gr. 15.
Zinci sulphatis, gr. 15.
Aquae rosae qs. ad., fl. oz. 8.

M.

This was at first prepared by adding the tr. opium and the comp. tr. catechu to the other ingredients—previously mixed “secundum artem.” It was found, however, that the precipitate subsided very rapidly and, with some specimens of comp. tr. catechu, was granular. The following method proved better: The tr. opium and the comp. tr. catechu were mixed with 4 fl. ozs. of the rose water, the other ingredients mixed secundum artem with the balance of the rose water and the two solutions mixed. By the latter method the precipitate was more bulky and more finely divided, hence, subsided more slowly and could be more evenly administered.

The well-trained pharmacist is exceedingly careful, when triturating, two powders, to add very slowly and cautiously the diluent powder to the more active; yet, very often, the same person fails to realize the importance of observing the same procedure when triturating an insoluble powder with a liquid. Two samples of the following prescription illustrate the importance of this:

R Calaminae, gr. 40.
Zinci oxidi, dr. 2.
Liquor calcis, fl. oz. 4.

M.

A sample, prepared by adding the lime water in considerable quantities at the start, although triturated for a fairly long time, commenced to subside immediately after being shaken up. Coarse particles could be readily seen in the mixture.

A second sample, prepared by adding the lime water in small amounts and triturating after each addition till a perfect magma was formed, had scarcely commenced to precipitate five minutes after being shaken. The particles were apparently evenly divided and after final separation, on long standing, the precipitate was twice as bulky as that in the first specimen. It is easy to imagine which sample could be most evenly applied and would give the most benefit when applied to the skin.

The following formula presents a unique difficulty:

R Kaolini, oz. 4.
Glycerini, fl. oz. 1.
Sod. salicylatis, dr. 2.
Ol. eucalypti, fl. dr. 4.
Ac. borici, gr. 50.
Ol. gaultheriae, fl. dr. 2.
Mentholis, gr. 40.
Lanolini, oz. 2.

M.

This was prepared by rubbing the kaolin, boric acid, sodium salicylate and lanolin together in a mortar, incorporating the oils in which the menthol had been dissolved, and, finally, adding the glycerin. The result was a granular mass

mixed with what appeared to be streaks of oil. However, the oils had been perfectly incorporated before the glycerin had been added; also, previous experiences had taught that alcohol and some other liquids would not mix with lanolin until diluted with sufficient water. Hence, a fluid ounce of water was added and well stirred in, when the mass became a perfectly smooth cataplasm.

A RECENT BUCHU ADULTERATION.

R. B. HARVEY.

Commercial lots of Buchu recently appearing on the market have been adulterated by the addition of small amounts of foreign leaves. Although present to the extent of only three or four percent, the intense astringency and bitterness of the leaves of this new adulterant make it especially objectionable.

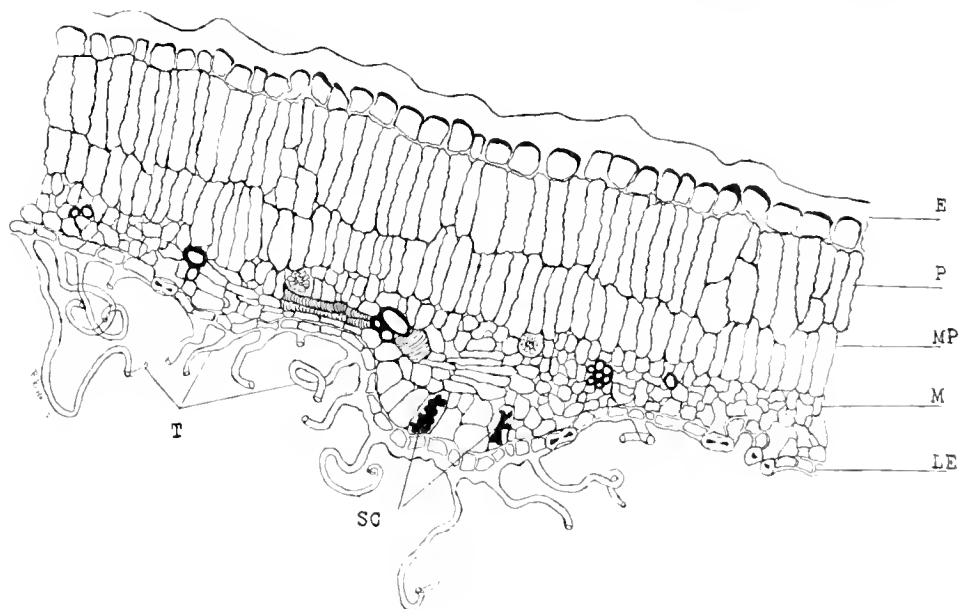


FIG. 1.

As no flowers or other diagnostic features were found, the botanical source of the leaves has not been determined, but they are probably derived from some shrub growing in the same locality as Buchu.

The leaves of the adulterant are somewhat darker in color than Buchu and of a different shape. They are oblong, lanceolate, 10-20 mm. long and 3 to 8 mm wide with acute apex and obtuse base. They are also much thicker than Buchu, the average being about $\frac{1}{2}$ mm. The upper surface of the leaf is olive green, glabrous, and finely reticulate; the under surface, somewhat lighter in color and minutely tomentose. The margin is entire and revolute, and the texture, coriaceous.

In cross section, the leaf of the adulterant (Fig. 1) shows a structure considerably different from that of Buchu (Fig. 2). The upper epidermis (E) of the adulterant is made up of thick walled cells, the outer part being 24-30

microns thick, striate, and unevenly papillate. No hypodermis corresponding to that of Buchu (HD) is found. The palisade layer (P) is made up of cells 90 microns long, and is followed by a layer of palisade—like mesophyll cells (MP) somewhat shorter than the first layer, and then by a mesophyll of spongy parenchyma (M). The lower epidermis (LE) is made up of comparatively small cells with moderately thickened walls. To this layer, long tubular and

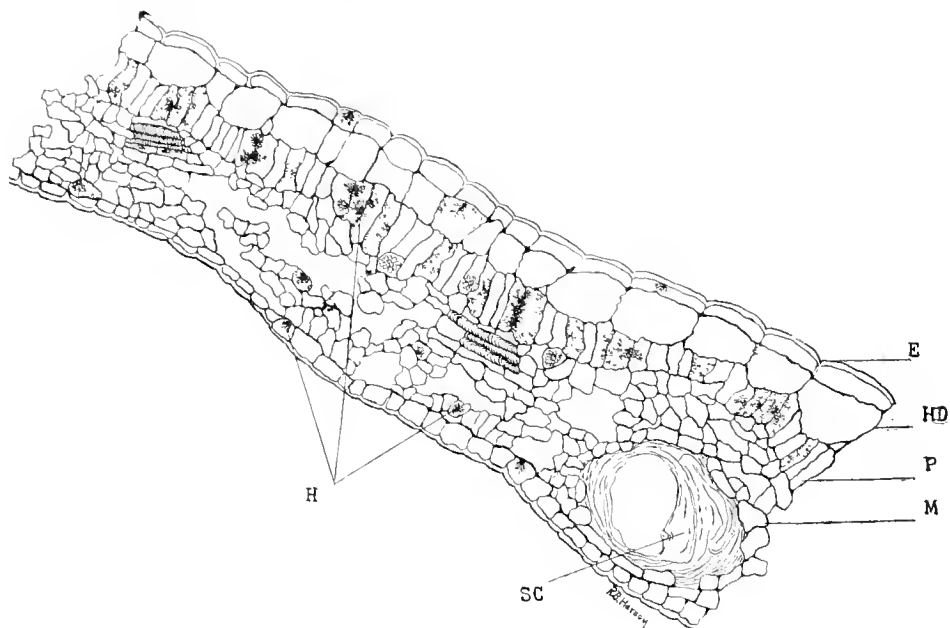


FIG. 2.

unicellular trichomes (T) are attached. These are intertwined and matted together and average 6 microns in diameter by about $\frac{1}{2}$ mm. long. A few brown secretion cells (SC) are found in the cross section but no hesperidin crystals (H) are shown. In powdered form the adulterant may be detected by the upper epidermis which has much thicker walls than those of Buchu, and by the unicellular trichomes which are everywhere in evidence.

BOTANICAL DEPARTMENT, ELI LILLEY & Co., August 5, 1913.

PHYTOCHEMISTRY IN AMERICA.*

III. WILLIAM THEODORE WENZEL.

NELLIE WAKEMAN.

It is so unusual to find a man who has not only lived his allotted three score years and ten, but has rounded out and passed a full four score and is still doing productive work, especially along scientific lines, that the mere existence of

*Nos. one and two under this caption have likewise emanated from the pen of Miss Wakeman, both sketches having appeared in the Pharmaceutical Review in 1908:

I—Helen Cecilia De Silver Abbott, Ph. Rev., 26, p. 151.

II—Henry Trimble, Ph. Rev., 26, p. 338.

such a man is worthy of more than passing notice. In the case of the subject of this sketch, however, not only his length of days but the scope and character of his whole life's work deserves consideration.

William Theodore Wenzell was born in Muehldorf, Germany, on the nineteenth of January, 1829. He came to America at an early age and was graduated from the Philadelphia College of Pharmacy in 1855. After graduation he removed to La Crosse, Wisconsin, where he practiced pharmacy and studied medicine, receiving the degree M. D. from the La Crosse Medical College in 1864. In 1872 he was appointed Professor of Chemistry in the Pharmacy Department of the University of California, and, in 1875, Professor of Chemistry and Toxicology in the Medical College of the Pacific, which institution conferred upon him, in 1876, the degree M. D. The University of California, in 1890, granted him the degree of Pharm. M., and made him, in 1898, Emeritus Professor of Chemistry of the Department of Pharmacy. In 1897 he became Professor of Chemistry and Toxicology in Cooper Medical College, and, in 1904, Emeritus Professor in the same institution. In 1899 Dr. Wenzell was appointed Chemist in the United States Appraiser's Department in the Customs House at San Francisco, where he was yet at work when the writer visited him last winter.

Professor Wenzell early became interested in plant chemistry and has retained this interest throughout his long and busy life. How great an attraction this line of chemical study has had for him is shown by a survey of the list of his published articles. Out of twenty-five original papers nine are upon plant chemical subjects while several others are upon closely related topics, such as the chemistry of individual alkaloids, the estimation of tannic acid, etc. Nor are these articles confined to any one period of his life, but are alternated with papers of a more purely medical or pharmaceutical character throughout a period of over fifty years, thus showing the continuity of phytochemical interest and research.

His first work, conducted at the Philadelphia College of Pharmacy and published in the American Journal of Pharmacy, in 1855, was A Proximate Analysis of the Tubers of *Corydalis Formosa*. This was followed by the Proximate Analysis of the Bark of the Root of *Euonymus Atropurpureus*. Then came, in 1864, an article to which he reverts with perhaps more of satisfaction than to any other of his published work. This is his paper on the Active Constituents of Ergot of Rye, announcing the discovery of two new alkaloids and naming them echoline and ergotine. Nearly fifty years later, in 1910, when more than eighty years old, he published another paper on Ergot: Ergoxanthin, A New Active Principle Found in Ergot.

Besides this work in the proximate analysis of plants and the investigation of alkaloids and related compounds, Dr. Wenzell has conducted researches upon the volatile oils of the cone bearing trees of the Pacific Coast. He has also long been interested in plant pigments and has made some valuable contributions to the knowledge of the colored constituents of plants. A complete list of his phytochemical papers is appended.

1855. Proximate chemical analysis of the tubers of *Corydalis formosa*. Am. Journ. Pharm., 27, p. 205.

1862. Proximate chemical analysis of the bark of the root of *Euonymus atropurpureus*. *Am. Journ. Pharm.*, 34, p. 385.
1864. On the active constituents of ergot of rye. *Am. Journ. Pharm.*, 36, p. 194.
1872. On Abietene, a new hydrocarbon. *Proc. Cal. Pharm. Soc.*
1884. On the volatile oils of *Chamaecyparis lawsoniana* (Oregon Cypress), *Proc. Cal. Pharm. Soc.*, 1884, p. 31.
1889. A contribution to the knowledge of the coloring matters of flowers. *Proc. Am. Pharm. Assoc.*, 37, p. 244.
1894. On a chemical and spectroscopical analysis of the coloring principles in the leaves of the red cabbage. *Pacific Druggist*.
1908. A contribution to the knowledge of the coloring matters of flowers. *Pacific Pharmacist*, 1, p. 446.
1910. On ergo-xanthin. A new active principle found in ergot, with a brief historical summary of the discovery of the alkaloids of ergot. *Am. Journ. Pharm.*, 82, p. 410

CONTRIBUTED FROM THE PHYTOCHEMICAL LABORATORY OF EDWARD KREMERS, Madison, Wis.

FIFTY YEARS IN PHARMACY.

May 1, 1913. Today fifty years ago I was sworn in as an apprentice in Bremerhaven and have kept it up ever since. I believe I am the only one in Chicago who has continuously kept at it as long as that. I could write pages on the changes in pharmacy. When I discovered Milwaukee, in 1867, we had no fluid-extracts. Now they're almost extinct again; then we had no ready-made pills, now, more than too many. Then we all made most of our own galenicals; now——? Well, the less the average druggist makes, the better, taking into consideration the stupidity and cupidity of a great many of our men who make iodine tincture of 0.01% strength. Heavens! What might their tincture of nuxvomica and digitalis be? I am ready to be burned as a heretic, but give me a preparation made on a large scale from assayed or examined crude drugs by any of the reputable large manufacturers. That may not be good propaganda music, but them's my sentiments. And so the changes in other ways have worked wonders. Debates and arguments in journals are more decorous than half a century ago, when the Chinese methods of making faces and throwing stink bombs were yet in vogue, but mud is a poor substitute for argument, according to my old school-mate Bismark.—*W. Bodemann.*

Of General Interest

THE N. A. R. D. CONVENTION AT CINCINNATI.

The Convention of the National Association of Retail Druggists held at Cincinnati last month was one of the most successful gatherings in the history of our sister organization.

The address of President Merritt at the opening meeting of the Association was one most thoughtful, and it advanced progressive ideas upon the vital questions before the trade. He announced an increase of four thousand dollars in receipts over the previous year and a considerable increase in membership of the Association. He scored the indifference and apathy which many druggists show to organization work and declared that the prerequisite to membership in the N. A. R. D. was "MANHOOD." He analyzed the recent decision of the U. S. Supreme Court regarding price-protection and called attention to ways by which that decision could be neutralized. He suggested the consignment plan, the cooperative plan and the probable workings of the laws recently passed in New Jersey. He declared the cooperative plan to be most effective. He said that Price-Protection was the paramount issue of the day in drug-affairs and that every effort should be made to secure through national and state legislation, "a just protection of retail prices."

He paid a strong and fitting tribute to the work of the National Drug Trade Conference and thanked the members of that conference for their earnest and unselfish labors in behalf of the trade. He approved the Sherley Law, but was outspoken in his condemnation of the Owen bill to create a national department of Health. He scored the dispensing doctor and said that the better class of physicians would assist in the effort to abolish that evil. He suggested as remedies, that physicians who dispense should be required to furnish their patients with a prescription of the drugs administered to them, and that in case of the death of one of their patients that some other person should certify the cause of death.

He condemned itinerant vending and suggested ways to limit and ultimately to abolish it. He called attention to the absurdity of States, whose laws required the qualification of pharmacists, having uneducated men acting as pharmacists in their public institutions. He urged a greater and a closer union among druggists to fight the chain-store evil, which he declared there was reason to believe was backed by the Standard Oil and Tobacco Trusts. He referred to the National Druggists' Home as "worthy of the support of every druggist in the United States," but advised a conservative policy in handling that question. He called imperative attention to the necessity of changing the fiscal policy of the Association and recommended the removal of the offices of the Association to some smaller city, where overhead charges could be cut, but said that the growing importance of national legislation suggested the Capitol City as the proper location for the headquarters of the Association. He closed with words of thanks for the honor conferred upon him and for the support given him by all the officers of the Association.

The Report of the Executive Committee placed Price-Protection to the front and their prime recommendation was that state legislation regarding the same should be sought along similar lines to the New Jersey law. It declared that the "N. A. R. D. was ready for war" and that "it possesses a power which if constantly and persistently employed will break down the barriers behind which the majority of proprietary manufacturers hide their indifference to our appeal." It condemned the attitude of the wholesalers to the retail trade and said, "We must hereafter disregard them and learn to travel in single harness." It called attention to the efforts of some manufacturers to secure "a more fraternal cooperation with the retailer," and said that "the wise manufacturer and proprietor" is farsighted enough to recognize that cooperative manufacturing and buying are important factors in business and shows cooperative bodies

favors which are denied to small retailers. It spoke in praise of the Propaganda Work of the Association and the Committee on National Legislation, and it found reason for congratulation on the increase of membership of the Association during the past year. It spoke in warm and appreciative terms of the fraternal relations existing between the N. A. R. D. and the A. Ph. A. and other kindred organizations. It stated the determination of the committee to force the principle of Price and Profit Protection at once and to discover the reason why the appeals of the retailers have been ignored, while those of the wholesalers have been listened to and their wrongs adjusted.

The Report of the Committee on National Legislation was a document of intense interest to every pharmacist, and it is difficult to make an abstract of it which will properly show forth the important matters which were so intelligently discussed in it. In its opening it called attention to the changes in the times and to a general demand of the people for a "clearer definition of powers and if need be a constitutional reconstruction in order that Government shall be for all the people and not be simply transferred from control of certain classes to certain other classes." It called attention to the increased restrictions of the laws and said that never before had the government been so largely concerned with "the things that men live by and with," and it prophesied that within a few years the national control of alcohol, even to its production, will become one of the greatest of issues in national legislation. It contrasted the efforts of the labor unions, the trusts and the farmer's granges to influence legislation with the work of the druggists and said of the latter, that it was work of "organization tyros." The report reviewed the recent decisions of the Supreme Court and summed up its review with the statement that, "there seems to be no legal bar to an absolute fixing of re-sale prices by the manufacturer, so long as he deals directly with his retail distributors without the aid of wholesalers or other middlemen, or otherwise retains the title to his goods in good faith and further provided that he confines his contracts solely to the consideration of prices and so forth concerning his own goods." It contended that price-protection has never had a more progressive year than the one just closing, and declared that where the druggists had stood alone in the past in

its support, that today the question of price-protection is the supreme national issue. It gave a qualified approval to the Freericks-Clapp bill, but said it did not go as far as it should in its demands. It discussed the "variability, contrasts and contradictions" of the decisions of the courts and said that the dissatisfaction engendered by these decisions made it "clearly perceptible that we are in the midst of an economic revolution, in which the foundations of our government bid fair to be relaid." The Narcotic Bill was exhaustively discussed in the report and it said that "it offers good evidence of the effectiveness resulting when the representatives of openly and honestly organized business co-operate with the government." It suggested that the sale of habit-forming drugs, vaccines and serums may be made a government monopoly as well as the sale also of tobacco, in the near future. It predicted the passing of the bill to advance the rank and pay of army pharmacists at the next session of Congress. It condemned the assumption of power by the Postmaster General to make changes in the rates and weight-limits of the Parcel Post Regulations and said that that power is being used for the special benefit of classes. It called upon the members of the trade to use every effort to restrict the manufacture of prison-made goods to those used exclusively in such institutions. The report favored one-cent postage, took a middle-ground upon the tariff and the income-tax, and advised that the Association be very tactful in its opposition to any proposed liquor-laws and made a protest against the classifying of retail druggists as "liquor-dealers."

The Secretary's report showed that forty-five states were represented in the Association, there being an increase of thirteen affiliated associations over the number of last year. The Treasurer's report showed a balance on hand of \$8,170.83 and an indebtedness to the Association for dues of \$21,443.75. The report of the Director of Publicity showed the net earnings of the JOURNAL for the past year to have been \$19,413.35. Other reports were received from various committees; the report of the telephone committee showing that the druggists of Chicago are supplied with an improved form of coin safety device superior to that in use in any other city. The Report of the Committee on National Legislation was the subject of warm discussion by the conven-

tion. Two reports were submitted to the body; the report of the minority objecting to the proposed bill recommended by the majority, because of its exemption of dispensing physicians from the keeping of records of sales; the requirement that pharmacists must have knowledge of the registry of physicians under the act; to the sale of preparations containing minimum quantities in inter-state commerce, and it also raised the question of the constitutionality of certain sections of the bill. After an extended discussion, the convention adopted all of the recommendations of the minority report with the exception of the second, and the report was then referred to the Committee on Resolutions.

The Flood Relief Committee reported a total amount received from all sources of \$10,141.35 and that assistance had been given to twenty-six members and ten non-members directly from that fund. Besides this immediate financial relief, the committee had served these sufferers by securing the replacement of damaged goods to such an extent as to make the total amount of relief figure the tidy sum of \$75,000. The Report of the Finance Committee was in the main approved, the only dissenting vote being upon their recommendation to establish a N. A. R. D. union-label. The Propaganda session on Thursday evening was a very interesting meeting. The principal address was made by Mr. Otto E. Bruder, the Director of Propaganda of the Association. He laid great emphasis upon the need of the repeal of Section 7 of the Food and Drugs Act, which section allows a medicinal preparation to vary from the standard if such variation is stated upon the label. Remarks were also made by Messrs. Anderson, Hynson, Winter, Campbell and Wallace.

The entertainment features of the meeting were very complete. On Sunday a trolley-ride about the city was given to the early arrivals. On Monday evening the Association was welcomed to the city by Mayor H. T. Hunt, President Charles Ehlers of the Ohio Valley Druggists' Association and Prof. John Uri Lloyd of the Ohio State Association. Mr. Charles H. Huhn responded to the address of the Mayor and Mr. J. T. Hartigan to those of the societies. The address of President Frank F. Ernst, of the Boston Association, in memoriam of J. Arthur Bean was a tribute which fittingly expressed the sorrow of the Association at the

loss it had sustained in the sudden passing away of one who had been a loyal worker in the pharmaceutical field. Mrs. Jessie F. Waterhouse spoke eloquently for the Women's Organization; Mr. Wallace referred to the cordial relations existing between the A. Ph. A. and the N. A. R. D., and Mr. Woodruff spoke for the Manufacturers of Medicinal Products. At the adjournment of this session the President's Reception and Ball brought together the delegates in a social way. Tuesday morning the ladies were the participants in a trolley-ride to the French Bros. Dairy Farm at Lebanon, and that evening occurred the reception to the President and officers of the W. O. N. A. R. D. in the parlors of the Hotel Sinton. On Wednesday evening the members were taken to the Zoological Garden, where, after an elaborate banquet had been served, a most delightful rendition of Shakespeare's Twelfth Night was given by the pupils of the Schuster Dramatic School. This entertainment was furnished by the American Druggists' Fire Insurance Co. On Friday the Association was the guest of the William S. Merrell Chemical Co. of Cincinnati, at a barbecue at Coney Island, and it may be safely said that all those who participated in this excursion enjoyed its many novel features. The final meeting of the Association was held in the banquet-hall of the Park and the Committee on Nominations made their report of nominations for officers for the ensuing year. The nominations were: President, James F. Finneran, Boston, Mass.; First Vice-President, Sol A. Eckstein, Milwaukee, Wis.; Second Vice-President, J. C. Schnuerer, Cleveland, O.; Third Vice-President, R. J. Frick, Louisville, Ky.; Treasurer, Grant W. Stevens, Detroit, Mich.; Secretary, Thomas H. Potts, Chicago, Ill.; Executive Committee, for three years, Samuel T. Henry, Philadelphia, Pa., and James P. Crowley, Chicago, Ill.; for two years, M. A. Stout, Bluffton, Ind. These nominees were elected by the Association and they were immediately installed into office. Mr. Finneran in expressing his appreciation of the honor conferred upon him, spoke of the great value of organization in securing results and sincerely thanked the members for their expression of confidence in his ability to lead them during the coming year. The other elected officers accepted their distinctions with appropriate words of thanks and pledged their best efforts to the work of the

Association. At the conclusion of these exercises Mr. Lee M. Pedigo was called upon to voice the thanks of the Association for their entertainment in the Queen City, which duty he performed in eloquent and fitting words. On the disembarkation of the delegates at the city-landing, the druggists of Cincinnati and their ladies formed a lane through which all the visitors passed for a warm handshake and kind words of farewell.



THINGS SAID AND DONE AT RECENT STATE ASSOCIATION MEETINGS.

CONNECTICUT.

The address of President S. A. Miller, delivered before the thirty-seventh annual convention of the Connecticut Pharmaceutical Association, held at the Hotel Pembroke, Woodmont, on June 11-12, discussed the legislative work of the Association, spoke in high appreciation of the work of its Legislative Committee and deplored the apathy of the members in relation to legislative affairs. It emphasized the necessity of keeping in touch with legislators and of the injury which proceeds from neglect of this important duty. It laid particular stress upon the failure of the Association to secure the repeal of Sect. 16 of the laws, and said this non-success was caused by the lack of support from the druggists of the small towns. It praised the work of the Board of Pharmacy in prosecuting those who had violated the provisions of the Pharmacy laws. It referred approvingly to the establishment of the House of Delegates and the Women's Section of the A. Ph. A. and noted the request of the Trustees of the National Druggists' Home for the appointment of a standing committee of three to assist in its supervision. It contained recommendations suggesting the advocacy by the Association of legislation transferring the responsibility for damages from a proprietor to the one actually making the error which caused the injury; that inspections should be made by State officers of the medicines carried in stock by dispensing physicians, and that physicians be placed on the same plane as druggists in the sale of medicines. It spoke in high appreciation of the support which the President had received from his fellow-officers and the committees of the Association, and pledged his best efforts to its future work.

NORTH CAROLINA.

The city of Newbern was the gathering-place for the members of the North Carolina Association for its thirty-fourth annual meeting, held on the 11th, 12th and 13th of June last. The assemblage was called to order by Vice-President C. P. Harper, of Selma, in the absence of President J. G. M. Gordon, of Clayton.

Mr. E. H. Meadows welcomed the Association to the city and Mr. C. P. Harper spoke in response. Addresses were also made by Dr. R. V. D. Jones and Mr. F. W. Hancock, the Secretary-Treasurer of the N. C. Board of Pharmacy. Mr. Hancock is a charter member of the Association and has attended thirty-three of its thirty-four annual meetings of the organization. Wednesday evening the members were the guests of Local Secretary C. D. Bradham and his wife at a reception given at their charming home. On Thursday, President Gordon delivered the annual address to the Association, in which he reviewed its activities and offered many suggestions for future reforms in the profession. Among the questions he discussed were "Sunday Closing" and "Higher Education." The papers read at the meeting were "Store Salesmanship and Nomenclature," by E. H. Roth, of Asheville; "Some of the Beauties of Pharmacy," and "The Relations of the Pharmacist and the Physician," by E. L. Tarkington, of Wilson; "Historical Sketch of Samuel Johnston Hinsdale" and "Formaldehyde and Permanganate Disinfectants," by Prof. E. V. Howell, of Chapel Hill; "Suggestions to Increase Interest in the Sales of Disinfectants," by Eugene Rimmer of Tarboro; "Analysis of Tea," by F. H. Lunn, of Winston-Salem, and "Analysis of Coffee," by C. L. Cox, of Warsaw. The officers elected for the ensuing year were: President, C. P. Harper, of Salem; Vice President, First, G. C. Goodman, of Mooresville; Second, E. L. Tarkington, Wilson; Third, E. G. Birdsong, Raleigh; Secretary, J. G. Beard, Chapel Hill; Treasurer, G. E. Burwell, Charlotte; Member Board of Pharmacy, F. W. Hancock, Oxford. It was voted to hold the next annual meeting at Hendersonville on the 17th, 18th and 19th of June next.

TENNESSEE.

The twenty-eighth annual meeting of the Tennessee Pharmaceutical Association was held at Memphis, July 8-10 last. The address of the President, Ernst C. Finch, of

Waverly, was one which dealt with many questions of the day in a lucid and a forcible manner. He congratulated the members on the advancement of the Association from one of feeble strength to that of being "one of the most powerful and successful state associations in the Union." He urged in no uncertain terms the value of association work in Pharmacy and the need of all pharmacists joining the associations of the profession. He referred to the work of the special committee appointed by the Association to draw up an "Anti-Narcotic Bill" for the state, and said that "Of course this Association cannot go upon record as being opposed to the passage of an Anti-Narcotic Bill, but it should be a sane law and one that treats the Dispensing Physician the same as the Pharmacist." He criticised the lack of uniformity in the state and national Pure Food and Drug Laws," and said that the former should be made to conform to the latter. He praised the work of the Ladies' Auxiliary and complimented its President, Mrs. T. A. Robinson, of Memphis, upon its efforts to make the meetings a success. He thanked the Traveling Men's Auxiliary for their valuable services to the Association. He spoke of the influence of the American Pharmaceutical Association upon National Pharmacy and urged his auditors to join it and to participate in its great work. He referred particularly to the formation of the Women's Section of that Association and urged the wives and daughters of the Tennessee pharmacists to attend the meetings of that section at Nashville. He also recommended that the Association continue its affiliation with the N. A. R. D. The entertainment features of the meeting comprised a banquet given by the Traveling Men's Auxiliary, a barbecue at which the hosts were the Chattanooga Medicine Company and a boat ride given by the Luck Ola Co.

The officers elected for the ensuing year are: President, T. A. Robinson; Vice-Presidents, Henry Oliver, J. A. Lloyd, J. J. Ingalls; Secretary, T. J. Shannon; Treasurer, Cliff Conger.

DELAWARE.

The Delaware Pharmaceutical Association held its twenty-seventh annual session at Wilmington on June 5 last. The meeting was largely attended by pharmacists from every section of the state. Only matters of routine business engrossed the attention of the Convention.

VIRGINIA.

A pleasant feature of the meeting of the Virginia Pharmaceutical Association, which was held at Old Point Comfort, July 8-10, was the extension of an invitation by that Association to the Rhode Island Pharmaceutical Association to meet with the former body at its next annual meeting to be held at Richmond the third Tuesday in September, 1914.

ILLINOIS.

At the meeting of the Illinois Pharmaceutical Association held at Quincy, June 24-27, the principal interest was found in the report of the legislative committee, made by its Chairman, R. E. Dorland, who related the efforts they had made for advanced legislation, much of which had been defeated by the so-called "patent-medicine" interests. The report of the committee was listened to with close attention by the members, who signified their approval at the close of the reading by applause, and by voting Chairman Dorland an honorarium of one hundred dollars for his services. They further testified their appreciation of his efforts by electing him President of the Association for the coming year.

IOWA.

The Iowa Pharmaceutical Association held its meeting at Waterloo, July 8-10, and it was said to be the largest gathering ever held under its auspices. The Convention considered the question of establishing a trade-journal by the Association, in order that the druggists might be properly represented by a paper and voted to increase the dues of the Association to five dollars.

INDIANA.

Lake Wawasee was the gathering place of the Indiana Pharmaceutical Association for their annual meeting held on June 24-26 last. The principal discussion was regarding the recently passed anti-narcotic law of the state, which was strongly commended by all who spoke in relation to it. The members were so pleased with the meeting place that it was decided to hold the meeting of next year at Lake Wawasee.

KENTUCKY.

The Kentucky Association gathered at Mammoth Cave for their annual meeting, June 17-19, and about one hundred and twenty-five members attended its sessions. The meeting discussed the question of establish-

ing a monthly trade journal, and a number of interesting papers were read. The next meeting will be held at Lexington, June 17-19, 1914.

MISSOURI.

One of the important matters which came before the Missouri Pharmaceutical Association at its last meeting at Pertle Springs, June 10-20, was the appointment of a committee to test the assay processes of the Pharmacopeia. The Board of Pharmacy reported that the state has 5387 registered pharmacists and 191 assistant pharmacists. Although the Association has met thirteen times at Pertle Springs, it was voted to hold the convention of next year at the same place, the opening session to be held on the third Tuesday of June.

Mr. John C. Wallace was the object of many congratulations at the meeting of the Pennsylvania Pharmaceutical Association at its annual meeting at Forest Park. While the Convention was in session Mr. Wallace received a telegram notifying him that the legislature had passed the Anti-Narcotic bill which Mr. Wallace had fathered, and the news was greeted with much enthusiasm by the assembly.



JAMES FRANCIS FINNERAN.

The recently installed President of the National Association of Retail Druggists, Mr. James F. Finneran, of Boston, was born in Danielsonville, Conn., July 22, 1867. At an early age he was taken by his family to Hopkinton, Mass., and received his education in the public schools of that town. He entered the drug business in Hopkinton and after an experience of about ten years he came to Boston and entered the employ of the Woodward Drug Co., in whose employment he remained for many years. On the reorganization of that company a number of years ago he became its President, a position he still occupies. The Woodward Drug Co. occupies the lower floor of the Paddock Building, one of the finest office buildings of the city, and it does a large business, perhaps the largest retail drug business in the state, besides doing some traffic in the wholesale line. It employs about forty assistants in all its departments.

Mr. Finneran has always been prominent and active in association work. He has been a member of the N. A. R. D. since its first organization and has been a constant attend-

ant at all of its meetings. He has been a member of the American Pharmaceutical Association since 1906. The same year he joined the Massachusetts State Pharmaceutical Association and immediately became active in its councils. For many years he has been a member of its Legislative Committee and as such his service has been of inestimable value to the pharmacists of the state.



JAMES F. FINNERAN, Boston,
President N. A. R. D.

which usefulness they recognized last June by the presentation to him of a massive silver loving cup of most elaborate design. He was the President of the Massachusetts Pharmaceutical Association for two years and on his retiring from that office he was elected its Treasurer. He has been President of the Boston Druggists' Association and of the Boston Retail Druggists' Association and is a member of the Corporation of the Massachusetts College of Pharmacy. It may be safely said that there is no activity of the druggists within his sphere of influence in which he is not interested and in which he is not recognized as a force.

He is a member of the Legislative Committee of the N. A. R. D. and is also a representative of that organization in the National Drug Trade Conference. His most

prominent penchant is for automobiling, to which pleasure he is most devoted. His family consists of his wife,—a prominent member of the W. O. N. A. R. D., and a young son Jameson. His home is in the pleasant Boston suburb of Everett.

The selection of Mr. Finneran for the Presidency of the N. A. R. D. may be said to have met with the unanimous approval of the country. He will bring to the administration of that high office the same ability and force of character he has always shown in all his work, both private and public, and we congratulate the National Association of Retail Druggists upon the wisdom of its choice.



MID-YEAR MEETING OF THE EXECUTIVE BOARD OF THE AMERICAN DRUGGISTS' FIRE INSURANCE COMPANY.

The regular quarterly meeting of the Executive Board of the American Druggists' Fire Insurance Company was held on August 30th. There were present Messrs. Avery, Beal, Heinritz, Kauffman, Rothwell, Zwick, and Freericks. The Board passed on and approved of all matters and transactions which took place in the second quarter of the year, and also gave directions looking toward the extension of the company's business and its increased usefulness to the drug trade of the country. The business of the company for the first half of the year was found to show a splendid increase over the first half of the preceding year, such increase amounting to \$1,276,484.29 at a premium increase of \$12,955.56.

The total business for the first half of the year amounted to \$6,494,615.33 at a premium of \$66,620.88. The income from securities amounted to \$7,211.94.

The total business in force on the first day of July amounted to \$11,220,134.33 at a premium of \$115,740.26. Of said total business in force there was reinsured \$886,298.50 at a premium of \$10,343.70.

On the first day of July the total assets of the company amounted to \$326,830.75, which included Government, County and Municipal Bonds having a total value of \$303,575.08. On the same day the total liabilities of the company other than reinsurance reserve amounted to \$5,439.33. The reinsurance re-

serve amounted to \$53,061.37. The total assets as shown on July 1st are after having provided for the \$18,000 dividend which was paid on March 1st to the stockholders of the company.

During the first half of the year the fire losses amounted to \$26,009.25. The total expenses amounted to \$21,474.83. The total amount of business reinsured during the same period was at a premium of \$7,408.51.

The company saved its policy-holders during the first six months of the year in premium cost the sum of \$22,206.96.

At its August meeting the Executive Board also approved the purchase of \$6000 Non-Taxable Cincinnati Bonds, which was made in July, and authorized the purchase of an additional \$5000 of Cincinnati bonds.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

STAMP TAX—PAYMENT UNDER DURESS.
A manufacturer of chemicals, while awaiting a decision as to whether ichthyol was an un-compounded chemical not subject to the war revenue stamp tax, bought and affixed stamps voluntarily. It was held that he could not recover the value of the stamps used. When the decision was rendered the manufacturer was satisfied that ichthyol was un-compounded and not taxable. He therefore ceased to affix stamps to the containers of the preparation. This being discovered, revenue officers insisted that the material was taxable and that the manufacturer should pay a sum equivalent to the face value of stamps which the government claimed should have been affixed, which the plaintiff subsequently did. It was held that the payment was voluntary, not under duress, and therefore could not be recovered. The manufacturer again began to affix the stamps and filed a protest with the government against the imposition of the tax, past and future, notifying the government that it was affixing the stamps under duress. It was held that this notice was a sufficient protest to entitle the manufacturer to recover the value of stamps affixed subsequent to the same. The tax was paid not

when he bought stamps, but when he affixed them to the containers. Until that was done he had not parted with his money, because the revenue office was prepared at any time, upon proper explanation, to repurchase unused stamps.

Merck v. Treat, C. C. A., 202 *Fcd.* 133.

SALE OF INTOXICATING LIQUORS. Section 2394 of the Iowa Code provides that before selling or delivering any intoxicating liquors to any person a request must be signed by the purchaser, stating the actual purpose for which it is purchased and for whose use. The signing of the request being a condition precedent to the right to sell, a sale without the request is an illegal sale. A druggist who is enjoined from making illegal sales from his drug store and makes such a sale is subject to a charge for contempt.

Batcher v. Nichols, *Iowa Supreme Court*, 141 *N. W.* 420.

SALE OF POISONS—LIABILITY. The New York Court of Appeals holds that where the contents of medicine are concealed from the public generally, and the manufacturer, knowing the contents, sells the medicine, recommending its use for certain indicated maladies, and an injury is caused to the purchaser thereof by reasons of some concealed poisonous drug, the manufacturer is liable. The New York Public Health Law, §235, subd. 2, provides that every proprietor of a drug store shall be responsible for the quality and strength of goods, except those sold in original packages of the manufacturer, and patent medicines. The court rules that a retail druggist who holds himself out to purchasers of a proprietary medicine as the actual manufacturer thereof cannot claim the benefit of the statute, and is liable for any injury suffered by the purchaser in consequence of a concealed poison.

The negligence which must be established to render a druggist liable in the sale of a poison is measured by his duty; and while that is only to exercise ordinary care, the phrase "ordinary care" in reference to the business of a druggist must be held to signify "the highest practicable degree of prudence, thoughtfulness and vigilance and the most exact and reliable safeguards consistent with the reasonable conduct of the business in order that human life may not constantly be exposed to the danger flowing

from the substitution of deadly poisons for harmless medicines."

Wilson v. Faxon, Williams & Faxon, 101, *N. E.* 799.

SALE OF COCAINE. Chap. 27 of Indiana Acts, 1911, makes it unlawful for any druggist or other person to sell cocaine except upon the written prescription of a duly registered physician, veterinarian or dentist, except that it may be sold at wholesale upon the order of a licensed pharmacist, druggist, or physician, etc. It is held that the act does not authorize a registered physician to operate a drug store and, as a druggist, to sell cocaine indiscriminately to any one applying therefore without a written prescription.

Niswonger v. State, *Indiana Supreme Court*, 102, *N. E.*, 135.

ADULTERATION—HYDROGEN PEROXIDE. In an action by the State for a penalty for selling hydrogen peroxide below the standard of 3 percent the defendants claimed that hydrogen peroxide does not appear in the United States Pharmacopoeia, except in the index, and therefore that no standard was prescribed. It was held that since the Pharmacopoeia recognized hydrogen dioxide, which is the same thing, and prescribed it 3 percent quality the defendants' claim could not be sustained. A guaranty of purity of the drug under the Federal Food and Drug Act of 1906 was held insufficient. New York Laws, 1910, c. 422, §240, providing that for a guaranty of purity of drugs to absolve the seller from liability, the guaranty must specify that the manufacturer did not adulterate or misbrand the drug within the provisions of the State statute.

People v. Straus, *New York Appellate Division*, 142 *N. Y. Supp.* 326.

SALE OF LIQUORS BY DRUGGISTS—SUFFICIENCY OF PHYSICIAN'S PRESCRIPTION. The proprietors of a store were convicted of violating the Local Option Law by the illegal sale of whiskey. They offered in evidence as justification of the sale what they termed was a prescription, which was the following: "Take this to O'Kelly & Fitch, Everton, Missouri. For Joe Finley, R Spts. Ferment Q. S. as a necessary remedy. E. S. M. D. No. —. Date 4-15." This had been given to the purchaser by a physician, Dr. E. Spyers, who, the defendants said, was regularly employed

by them as a pharmacist. Missouri Rev. St., § 5781, gives right to "a druggist, proprietor of a drug store or pharmacist to sell intoxicants on a physician's prescription." To be protected by this statute it was held that the seller must be either a registered pharmacist, or assistant pharmacist, or have such a person in his employ for the purpose of compounding physicians' prescriptions. The defendants were licensed as merchants, and there was no claim that either of them was a registered pharmacist or assistant pharmacist, nor was Dr. Syper such at the time the liquor in question was sold. A registered and practicing physician may become a registered pharmacist, but is not such unless complying with the laws relating to licensing pharmacists. The defendants therefore were not within the protection of the statute. The prescription itself was not dated and signed as required by the statute.

State v. O'Kelly, Mo. App., 157 S. W. 1055.

SALE OF STOCK OF DRUGS—RESCISSION. In an action to rescind a purchase of the stock of a drug company, known as the Raven Drug Company, in Seattle, and to recover from a stockholder therein the money paid for the stock, recovery was sought upon the ground that the defendant, Stewart, was a large owner of the stock of the company, which was unknown to the plaintiff at the time of the purchase; that Stewart recommended the purchase of the stock as a good investment; that the plaintiff relied upon such recommendation; and that he afterwards learned that the stock was of no value. Judgment was given for the defendant on three grounds: (1) The plaintiff failed to show that there were any confidential relations existing between him and the defendant Stewart. (2) Even if there were such relations, the plaintiff did not rely upon them, but made an independent investigation of the property he bought, learned its value, and the debts existing against it, and purchased with the full knowledge of the condition thereof; he was experienced in the business and purchased, not upon representation of the defendant Stewart, but upon his own knowledge and judgment. And (3) after the plaintiff learned of the defendant's interest—if interest was material—and after he had been in actual possession for a period of two or three months and knew all about the business, he made no complaint and did not offer

to rescind the contract on that account. It was his duty upon discovering the fact to at once announce the facts and his intention to rescind.

Harris v. Stewart, Washington Supreme Court, 131 Pac. 212.

ATTEMPTING TO INDUCE WITNESS TO ABSCOND—VIOLATION OF THE LIQUOR LAW. Certain druggists were indicted for violating the Local Option Law by filling whiskey prescriptions, some of which had been issued by a certain physician to one H. The druggists threatened to have the physician indicted. He said he would see H. He drove to the home of the latter, took a private ride with him for fifteen minutes, and intimated that the druggists would pay H. \$50 a month and railroad expenses almost anywhere he might want to go if he would leave the jurisdiction so that he would not be compelled to testify. An arrangement was made that H. should meet the physician the next morning, which he did. A prosecution was subsequently brought against the physician under Missouri Rev. St., § 4352, which provides that every person who by bribery, directly or indirectly, shall induce or attempt to induce any witness to leave the jurisdiction, etc., shall be guilty of a misdemeanor. H. testified that in the conversation he had with the defendant at their meeting the defendant said that it was nothing to him whether H. went or not, that he, the defendant, was not getting anything out of it, but that the druggist could afford to give H. \$1,000 if he would go. Nothing came of the affair, however, and the druggists pleaded guilty. It was held that these facts were sufficient to sustain a conviction of an attempt to bribe H. not to testify.

State v. Davidson, Mo. App., 157 S. W. 890.

MISBRANDING OF LIQUORS. In a prosecution for the misbranding of certain "London Dry Gin" on the ground that it was not made in London the jury found on sufficient evidence that the name had reference to a distinct kind of gin, which need not necessarily be made in London, and that in using the label the maker did not intend to deceive or mislead the purchaser by representing that the gin was a foreign product. It was held that the government was not entitled to a judgment of condemnation.

United States v. Thirty-six Bottles of London Dry Gin, 205 Fed. 111.

NOTICES OF JUDGMENT—FEDERAL.

PURE FOOD AND DRUGS ACT.

No. 2202. *Adulteration of Canned Tomatoes by Addition of Water* Roberts Bros., Baltimore, Md., shippers. Fine of \$5. Maryland.

No. 2203. *Adulteration and Misbranding of Syrup*. Labeled "Granulated and maple sugar syrup, 99½% pure." Adulteration alleged because of substitution in part of cane sugar syrup and also because its inferiority was concealed by artificial coloring. Misbranding alleged because it contained but little maple syrup. Dixie Syrup Co. (Inc.), Baltimore, Md., shippers. Plea of guilty. Fine of \$25. Maryland.

No. 2204. *Adulteration and Misbranding of Paprika*. Substitution of Spanish red pepper or pimento for Hungarian paprika in whole or in part with more than 10 percent of mineral matter. Frank Tea & Spice Co., Cincinnati, O. Plea of nolo contendere. Fine of \$25 and costs. Ohio S. D.

No. 2205. *Misbranding of Syrup*. Labeled "4 lbs. net," whereas the package contained but 3 pounds 11.7 ounces net. Farrell & Co., Omaha, Neb. Plea of guilty. Fine of \$25 and costs.

No. 2207. *Misbranding of Stomach Bitters*. Labels stating that the principal ingredients were imported conveyed the impression that the product, Lithauer Stomach Bitters, was manufactured in Germany, whereas it was manufactured in the United States. Lowenthal-Strauss Co., Cleveland, O., shippers. Condemned and sold. New Jersey.

No. 2208. *Misbranding of Confectionery*. Labeled "Phoenix Brand Maplettes." Product did not consist of maple sugar, but was cane sugar, containing artificial maple flavor. Reinhart & Newton Co., Cincinnati, O., shippers. Plea of guilty. Fine of \$25 and costs. Ohio S. D.

No. 2210. *Adulteration of Coffee*. Substitution of Colombian coffee for Java coffee. Great Atlantic & Pacific Tea Co., Jersey City, N. J., shippers. Plea of non vult. Fine of \$50. New Jersey.

No. 2211. *Misbranding of Confectionery*.

Labeled "Phoenix Brand Delmore Maples." Contained no maple sugar. Reinhart & Newton Co., Cincinnati, O., shippers. Plea of guilty. Fine of \$25 and costs. Ohio S. D.

No. 2213. *Misbranding of Beef, Wine, and Coca*. Labeled "Sutliff & Case Co., Beef, Wine and Coca. Alcohol 15%." Contained 23.75 percent alcohol. Sutliff & Case Co., Peoria, Ill., shippers. Plea of guilty. Fine of \$10 and costs. Illinois S. D.

No. 2214. *Adulteration and Misbranding of Tomato Pulp*. Contained yeasts, spores, bacteria and mold filaments, and was prepared from tomato clippings and trimmings. Cooke-Shanawolf Co., Baltimore, Md., shippers. Condemned and destroyed. New Jersey.

INSECTICIDE ACT.

No. 18. *Adulteration and Misbranding of Arsenate of Lead*. Labeled "New Process Arsenate of Lead. Guaranteed to contain * * * not more than ½ of 1 percent water soluble arsenic." Product consisted of arsenate of lead and arsenite of lead, and contained more than ½ of 1 percent soluble arsenic. Sherwin-Williams Co., Cleveland, O., shippers. Plea of guilty. Fine of \$50. Ohio N. D.

No. 19. *Misbranding of "Conkey's Dip and Disinfectant," "Nox-i-cide," and "Fly Knock-er."* Names and percentages of inert ingredients not given on label. Quantity of Fly Knock-er not correctly stated. G. E. Conkey Co., Cleveland, O., shippers. Plea of guilty. Fine of \$15. Ohio N. D.

No. 21. *Misbranding of "Zenoleum."* Name and percentage of inert ingredients not stated on label. Zenner Disinfectant Co., shippers. Default. Forfeiture and destruction. Massachusetts.

No. 22. *Misbranding of "Kibler's Strictly Pure Paris Green."* Labeled "Half Pound Net Weight"; contained less than that quantity. Kibler Chemical Co., Indianapolis, Ind., shippers. Condemnation consented to. Released on bond. Louisiana.

No. 23. *Misbranding of "Extra Refined Camphorated Flake Compound."* Did not contain camphor but naphthalene. Levy Chemical Co., 51 W. 3d St., New York. Plea of guilty. Fine of \$25. New York, S. D.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

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Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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(Signed) J. H. BEAL, Editor.

Sworn to and subscribed before me this 4th day of October, 1913.

(Seal) JAMES M. SPIKER.

Notary Public.

(My commission expires Jan. 24, 1914.)

DISTILLED FROM THE NASHVILLE CONVENTION.

OTTO RAUBENHEIMER, PH. G., BROOKLYN, N. Y.

A. Ph. A. The Pharmaceutical Association. Membership only \$5—annually. Educational, Practical and Scientific. Rendezvous of American Pharmacy. Important and Interesting Meeting. College Faculties now well represented. And so were Boards of Pharmacy. N. F. IV and U. S. P. IX in 1914.

Pharmacy is NOT going backward. Historical Pharmacy, one of the features. As well as Practical Pharmacy and Dispensing.

Retail Pharmacists were very prominent. Many important problems were discussed. Among them Education and Legislation. Centenary of Iodine in 1913.

Entertainments were well planned.

U missed a great time—

The time of your life—

If you were not present.

College Reunions, an annual feature.

As well as the exchange of reminiscences.

Local committee deserves credit.

Almost a scrap about pharmacy degrees.

Section meetings were well attended.

Sixty-first convention great success.

On time were sessions started.

College professors and pharmacists
elbowed.

Important business was transacted.

All helped to make meeting a record-breaker.

The pharmaceutical journals were well represented

in the sessions, as well as outside.

On the go all the time.

Nashville, we will come again!

<>

SOME REFLECTIONS ON THE NASHVILLE MEETING.

Pleasant memories are still fresh regarding the Nashville meeting, which from all accounts seems to have been a successful one. The warmth of the welcome of our Tennessean friends was only exceeded by the warmth of the weather. Nashville itself presented the appearance of a wide-awake, prosperous and beautiful city. Those who had the courage to climb the two hundred (and more) steps to the cupola of the State House were rewarded by a magnificent view.

It seemed incongruous to some of the visitors, to see in a "prohibition" state so many

places where "the cup that cheers and also inebriates" could be had. I should infer that more effort was put into passing the law than in enforcing it; this is bad, as it tends to bring the law into disrepute.

A great deal of constructive work was done at the different meetings. It is probably too soon to properly estimate the value of the House of Delegates, but if it acts as a muffler in silencing flights of oratory which would otherwise be inflicted on the association itself, it will prove of value. Other constructive work was the finishing of the Pharmaceutical Syllabus and the prospect of its being in print before the close of the year. While the book has been thus far looked at somewhat askance, we think its value will be ultimately established.

Within the last few years there has seemed to be a tendency to multiply sections, possibly beyond their usefulness. The section on Commercial Interests did not arouse the interest which it was hoped it would when or-

ganized. The very interesting and practical lecture on advertising by Mr. Ben R. Vardaman only secured a small audience. It seems to me that it would be better to merge this section, with that on Practical Pharmacy and Dispensing, as a large part of the success of pharmacy comes, or should come, by way of this channel.


A practical point, which should be given careful attention, as it affects so greatly the attendance, is the hotel charges. In the Pennsylvania Pharmaceutical Association, the Committee on Time and Place of Meeting has gotten wise to the fact that this is a vital point, consequently they invite specific bids from the hotels within the limits of the state, that are capable of entertaining the Association. As these hotels are all on the American plan it is easy to figure out the cost of a trip.

One of the problems seems to be that the local committee at the place of meeting, as a matter of local pride, selects the handsomest

Brooklyn College of Pharmacy
Certificate
OF
Ability, Accuracy, Efficiency

This is to certify that **Israel Schwartz**
has successfully completed the course of study
The American Pharmaceutical Association
offered by
The Brooklyn College of Pharmacy
as the
Post Graduate Student of the
Faculty of Pharmacy
and is hereby recommended for the
Nomination Prize.

William S. Anderson, Sec'y & Ex. Sec'y



G. Lawrence D. Doremus, Jr., President
Andrew E. Ferguson, Ph.D., Secretary

CERTIFICATE USED BY BROOKLYN COLLEGE OF PHARMACY FOR A. PH. A. NOMINATION PRIZE.

hotel in the city, without binding the hotel in any way as to prices for rooms and meals. I am told that at the Hermitage Hotel, before the advent of the members of the A. Ph. A., a good club breakfast was served for fifty cents, but it was withdrawn the day of our arrival.

It does not seem fair that corn on the cob that costs twelve cents a dozen in the market should cost twenty-five cents a piece when served at the hotel. A prominent gentleman of the Association told me that a room for himself and wife cost six dollars per day, and the meals nearly as much more; this cost added to the large railroad fare, which by reason of distance, many of the members have to pay, keeps many of the members of the Association from the meeting, or at least their wives. It may be said on the other hand that no one is compelled to pay these prices, they can go to a cheaper hotel, but it is difficult for a stranger to make a wise selection, and it is much pleasanter for a lady to be at the headquarters hotel. It is to be hoped that our friends in Detroit will take up this matter of charges, and if they select the new and magnificent Hotel Pontchartrain, will have a written agreement as to charges. But probably I have said enough in way of criticism.

Some of the events of the week stand out most prominently, amongst them, the trolley ride on Thursday afternoon, followed by lunch on the lawn of Vanderbilt University, and the concert by the Fiske Jubilee singers in the chapel, 'their sweet voices haunt me still.' The trip to General Jackson's home, the Hermitage, was another "red letter" event which I think all most thoroughly enjoyed. I had much pleasure in a little chat with General Jackson's favorite grandchild, Mrs. Dr. Lawrence, the venerable old lady that greeted us. I have marvelled since at her wonderful memory, for she told us that she remembered distinctly the burning of the dwelling in 1834 as she was on the lawn at the time; as her father was not married until 1831 she could not have been much more than two years old at the time. However, it is one of the prerogatives of old age to be reminiscent. On our way home, a small party of us laid over at Chattanooga and visited Lookout Mountain, the magnificence of its views cannot be described or exaggerated.

CLEMENT B. LOWE.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

<>

NASHVILLE BRANCH.

The Nashville Branch of the A. Ph. A. held its regular session in Furman Hall at Vanderbilt University, September 11, 1913, with President J. O. Burge in the chair. After the reading and approval of the minutes of last meeting a large number of letters were read from members attending the convention expressing appreciation of the cordial manner in which they were entertained here.

Reports from the various local committees showed that the convention was a success from every standpoint. The membership committee reported the addition of 61 new members to the Association, 45 of which were in Tennessee and 22 in Nashville. The report of the Finance Committee showed the funds of the Branch to be in splendid shape.

The Secretary was instructed to send a letter of thanks to those who made donations for the entertainment of the convention.

A report of the N. A. R. D. Convention at Cincinnati was made by C. C. Young.

W. R. White, E. A. Ruddiman and M. E. Hutton were named as a Program Committee with instructions to prepare a suitable program for the ensuing year.

On motion, the Branch adjourned to meet again at the same place October 9th.

W. R. WHITE, Secretary.

ST. LOUIS BRANCH.

The Saint Louis Branch of the American Pharmaceutical Association held an impromptu meeting at the Missouri Botanical Garden on Friday afternoon, September 26.

Under the guidance of Mr. Charles H. Thompson, Assistant Botanist, the members and their friends made a general inspection of the Garden. The Propagation Department interested them very much for here they saw many medicinal and ornamental plants in the early stages of their growth.

Those present were Miss Dora Suppan, Miss R. Mueller, Miss Mae Peters, Mrs. Otto Kring, Mrs. Gustave Kring, Messrs. B. A. Suppan, John A. Mueller, W. R. Kaps, Leo Suppan, C. R. Sizemore, William K. Illhardt, Otto Kring, Gustave Kring, Sidney Willett, Theodore R. Schwerdtmann, E. A. Sennewald, Theodore F. Hagenow, Sr., Theodore Hagenow, Jr., Charles V. Hagenow and J. W. Mackelden.

J. W. MACKELDEN, Secretary.

Council Business

COUNCIL LETTER No. 1.

PHILADELPHIA, Sept. 10, 1913.

To the Members of the Council:

Motion No. 1 (Time of Sixty-second Annual Meeting). Moved by Local Secretary, Leonard A. Seltzer, seconded by J. H. Beal, that the Sixty-second Annual Meeting of the American Pharmaceutical Association be held during the week beginning Monday, August 17, 1914.

Mr. Seltzer advises that, in order to close arrangements with the local hotel, it is necessary that this question be decided *at once*.

MEMBERS OF THE COUNCIL, 1913-1914.

Alpers, William C., City Island, New York.
 Apple, Franklin M., 31st and Berks Sts., Philadelphia, Pa.
 Asher, Philip, 1606 St. Charles Ave., New Orleans, La.
 Beal, James H., Scio, Ohio.
 Beringer, George M., 5th and Federal Sts., Camden, N. J.
 Caspari, Charles, Jr., University of Maryland, Baltimore, Md.
 Caspari, Charles E., 4060 Westminster Place, St. Louis Mo.
 Clark, Albert H., 74 E. 12th St., Chicago, Ill.

Craig, Hugh, 100 Williams St., New York, N. Y.
 Diehl, C. Lewis, 932 Cherokee Road, Louisville, Ky.
 Eberle, Eugene G., 1804 Jackson St., Dallas, Texas.
 England, Joseph W., 415 N. 33d St., Philadelphia, Pa.
 Fennel, C. T. P., 614 W. Court St., Cincinnati, Ohio.
 Floyd, Henry B., 1840 You St., N. W., Washington, D. C.
 Godbold, Fabius C., 2734 Prytania St., New Orleans, La.
 Godding, J. G., 278 Dartmouth St., Boston, Mass.
 Good, James M., 2601 Olive St., St. Louis, Mo.
 Havenhill, L. D., Lawrence, Kans.
 Hopp, Lewis C., 1104 Euclid Ave., Cleveland, Ohio.
 Ilhardt, William K., 4836 Delmar Blvd., St. Louis, Mo.
 Koch, J. A., College of Pharmacy, Pittsburgh, Pa.
 LaPierre E. H., 96 River St., Cambridgeport, Mass.
 Lindvall, Charles G., 1303 13th St., Moline, Ill.
 Lyons, Albert B., 102 Alger Ave., Detroit, Mich.
 Martin, John A., 930 15th St., Denver, Col.
 Mayo, Caswell A., 66 West Broadway, New York, N. Y.
 McElhenie, Thomas D., 259 Ryerson St., Brooklyn, N. Y.
 Nitardy, F. W., 1418 Cherokee St., Denver, Col.
 Payne, George F., 50 Armstrong St., Atlanta, Ga.
 Richardson, W. S., 316—4½ St., S. W., Washington, D. C.
 Ruddiman, E. A., 101 24th Ave., S., Nashville, Tenn.
 Sayre, Lucius E., Lawrence, Kas.
 Seltzer, F. A., 32 Adams St., W., Detroit, Mich.
 Thomas, John B., Baltimore and Light Sts., Baltimore, Md.
 Whelpley, Henry M., 2342 Albion Place, St. Louis, Mo.
 White, William R., 314 Hancock St., Nashville, Tenn.
 Wulling, F. J., University of Minnesota, Minneapolis, Minn.

Very truly yours,

J. W. ENGLAND,
 Secretary of the Council.

415 N. 33d St.

<>

A. PH. A. COUNCIL LETTER No. 2

PHILADELPHIA, Sept. 22, 1913.

To the Members of the Council:

W. C. Alpers writes:

"Regarding motion No. 1, fixing the date of our next annual meeting for the week of August 17, 1914, I would say that a great

number of pharmacists will be absent at that date for a European trip. So far there are twenty members of the A. Ph. A. that have expressed their readiness to go and more are coming. The tourists will return on August 20th. Unless there are good reasons for adhering to this date, I would like to make a motion to substitute August 24 for August 17."

The trip referred to is an excursion to Germany, Switzerland and France, from July 2 to August 20, 1914, under the auspices of the New Yorker Deutscher Apotheker Verein of the City of New York.

Local Secretary L. A. Seltzer writes that should any one desire to move for the change of date he will not object, provided the decision be made at *once*.

The question of date of annual meeting of the N. A. R. D. will not be decided, your Secretary is informed, until the December (1913) meeting of the Executive Committee of the N. A. R. D., so that there need be no conflict of dates between the annual meetings of the two Associations.

Motion No. 2 (Date of Sixty-second Annual Meeting). Moved by W. C. Alpers, seconded by F. W. Nitardy, that the date "August 24, 1914," be substituted in Motion No. 1 (C. L. No. 1) for the date of "August 17, 1914." The substituted motion will then read: "That the Sixty-second Annual Meeting of the American Pharmaceutical Association be held during the week beginning Monday August 24, 1914."

Motion No. 3 (Appropriation of \$35 for Badges and Bars). Moved by J. H. Beal, seconded by J. W. England, that the sum of Thirty-five (\$35.00) Dollars, or so much thereof as may be necessary, be appropriated for Badges and Bars.

The appropriation has been approved by the Committee on Finance.

Motion No. 4 (Election of Members). You are requested to vote on the following applications for membership:

No. 1. William Lewis Gokay, 417 Main St., Bennington, Vt., rec. by Wm. B. Day and A. H. Clark.

No. 2. Ralph E. Hare, Corp. Hosp. Corps, Ft. Mills, Corregidor Island, P. I., rec. by Edgar T. Hitch and Frederick R. Williams.

No. 3. Robert Griffey Kennedy, Military Hospital, Pettit Barracks, Zamboanga, Mindanao, P. I., rec. by Arthur Neville and H. Cook.

No. 4. Rasmus Peter Nelson, Fort Mills, Corregidor Island, P. I., rec. by Arthur Neville and Harry Cook.

No. 5. August Henry Waitz, Sergeant Hospital Corps, U. S. Army Transport "Wright," Zamboanga, Mindanao, P. I., rec. by Arthur Neville and G. Cushman.

No. 6. Harry L. Fuson, Dover, Tenn., rec. by C. C. Young and J. Y. Waldrum.

No. 7. Minnie M. Whitney, 714 Wyandotte St., Kansas City, Mo., rec. by Daniel V. Whitney and H. M. Whelpley.

No. 8. John Griffith Roberts, 35 Poplar St., Philadelphia, Pa., rec. by J. W. England and Willard Graham.

The following applications for membership were favorably acted upon at the Nashville (1913) Meeting of the Association, August 18 to 23, inclusive:

No. 279. Henry Gibbons Posey, 1128 Peniston St., New Orleans, La., rec. by H. M. Whelpley and J. W. Mackelden.

No. 280. James A. Finley, Lawrenceburg, Tenn., rec. by Ira B. Clark and J. O. Burge.

No. 281. Ignatius Kingman, East Grand Fork, Minn., rec. by H. M. Whelpley and J. W. Mackelden.

No. 282. Edward Hulbert Niles, 1500 E. Michigan St., Indianapolis, Ind., rec. by Burton Cassaday and W. H. Rudder.

No. 283. Theophilus Zimmerman, Rose Tree Dispensary, 17th and Cherry Sts., Terre Haute, Ind., rec. by E. A. Ruddiman and William R. White.

No. 284. Chilton Scott Porter, 430 E. Maxwell St., Lexington, Ky., rec. by Linwood A. Brown and J. W. England.

No. 285. Rogers Americus Barksdale, Overton, Texas, rec. by William R. White and E. A. Ruddiman.

No. 286. Ezekiel Spry, care Chief Surgeon, Philippine Department, Manila, P. I., rec. by Frederick R. Williams and Edgar T. Hitch.

No. 287. Jesse St. John Davenport, care Chief Surgeon, Philippine Department, Manila, P. I., rec. by Fredk. R. Williams and Edgar T. Hitch.

No. 288. William McFarland, Fort Mills, P. I., rec. by Frederick R. Williams and Edgar T. Hitch.

No. 289. Stonewall Jackson McMahon, 837 East South St., Batesville, Ark., rec. by John B. Bond, Sr., and Lotta K. Snodgrass.

No. 290. Samuel Meyer, 229 13th St., College Point, L. I., N. Y., rec. by Caswell A. Mayo and J. W. England.

No. 291. Joseph O. E. Hummel, 5144 Hazel Ave., West Philadelphia, Pa., rec. by J. F. Pearson and H. M. Whelpley.

No. 292. Charles Herbert Rogers, care Pharmacy Department, University of Min-

nesota, Minneapolis, Minn., rec. by H. M. Whelpley and J. W. England.

No. 293. John Grover Beard, Chapel Hill, N. C., rec. by K. E. Bennett and J. O. Burge.

No. 294. Harry Seldan Arrington, 244 Church St., Norfolk, Va., rec. by E. L. Brandis and T. A. Miller.

No. 295. L. D. Brunk, Jr., Nowata, Okla., rec. by F. B. Lillie and W. B. Day.

No. 296. S. M. Scott, Jr., Terre Atta, Va., rec. by F. B. Haymaker and W. B. Day.

No. 297. Carroll A. B. Jensen, 333 S. Montana St., Butte, Montana, rec. by G. D. Timmons and A. W. Linton.

No. 298. Robert Loyal Perkins, Valparaiso, Ind., rec. by G. D. Timmons and A. W. Linton.

No. 299. Rafael Martin Mendez, Wall St., Lares, Porto Rico, rec. by G. D. Timmons and A. W. Linton.

No. 300. William Karl Krallman, 432 W. 3d St., Davenport, Iowa, rec. by Wilber J. Teeters and R. A. Kuever.

No. 301. Richard Franklin Morgan, 139 W. Oakwood Place, Buffalo, N. Y., rec. by Albert M. Roehrig and George Reiman.

No. 302. Charles Henry Bader, 713 11th Ave., S., Nashville, Tenn., rec. by J. O. Burge and E. A. Ruddiman.

No. 303. A. B. Hall, 219 N. Senate Ave., Indianapolis, Ind., rec. by Thos. J. Shauman and E. C. Finch.

No. 304. Henry Bertrams, Augusta, Ky., rec. by William R. White and J. O. Burge.

No. 305. Robert McCrealy Oglesby, Bartow, Florida, rec. by E. A. Ruddiman and J. T. McGill.

No. 306. Carl E. Weise, 2705 West End Ave., Nashville, Tenn., rec. by William R. White and E. A. Ruddiman.

No. 307. Joseph Rosin, 9th and Parrish Sts., Philadelphia, Pa., rec. by A. G. Rosengarten and Frederick Rosengarten.

No. 308. Robert F. Grace, 331 Chartres St., New Orleans, La., rec. by Philip Asher and J. W. England.

No. 309. James Arthur Stirling Woodrow, 317 Broadway, Cambridge, Mass., rec. by E. C. Marshall and C. F. Nixon.

No. 310. G. Hanserd King, 10th and Buchanan Sts., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 311. Jud Guilford Brumit, 1709 Joe Johnston Ave., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 312. Gus A. Blodin, 1235 5th Ave., N., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 313. James K. Goodloe, 1518 Hawkins St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 314. Charles Bell Whitworth, 1134 Jefferson St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 315. William Charles Kraemer, Wood Ave., Linden, N. J., rec. by David Strauss and J. H. Beal.

No. 316. Julius M. Rogoff, Medical Department, Vanderbilt University, Nashville, Tenn., rec. by William R. White and Samuel C. Davis.

No. 317. Sam Sandopher Bradshaw, 700 Woodland St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 318. Ernest J. Schott, 602 Fatherland St., Nashville, Tenn., rec. by E. A. Ruddiman and S. C. Davis.

No. 319. James Roy Mansfield, 1001 Jefferson St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 320. Oscar Jones Nance, Jackson, Tenn., rec. by Ira B. Clark and J. B. Sand.

No. 321. Arlie Lu Wadder, 2101 8th Ave., S., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 322. Robert J. Kleiser, 422 Fifth Ave., S., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 323. August Nickel, 4th Ave., South and Ash St., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 324. Anderson Miller Webb, Jefferson and 4th Ave., Nashville, Tenn., rec. by E. A. Ruddiman and Samuel C. Davis.

No. 325. George D. Stroh, Pittston, Pa., rec. by Louis Emanuel and Lucius L. Walton.

No. 326. John Stedman McDonald, Lumberton, N. C., rec. by K. E. Bennett and J. O. Burge.

No. 327. Jonas Y. Waldrum, 105 8th Ave., North, Nashville, Tenn., rec. by William R. White and C. C. Young.

No. 328. D. Olin Woodworth, 122 West First St., Albany, Oregon, rec. by John M. A. Laue and J. H. Beal.

No. 329. Robert Lotta Crown, 879 Madison Ave., Memphis, Tenn., rec. by F. W. Ward and Samuel C. Davis.

No. 330. William Cleveland Rollins, Madill, Okla., rec. by J. C. Barton and F. H. Hudelson.

No. 331. Joe Wharton Peyton, 500 Texas St., Shildport, La., rec. by E. A. Ruddiman and J. T. McGill.

No. 332. F. A. Mall, Belle Plaine, Iowa, rec. by E. O. Kagy and J. H. Beal.

No. 333. Thomas A. Chapman, Portland, Oregon, rec. by E. O. Kagy and J. H. Beal.

No. 334. Mary E. Selzer, Menlo Park, California, rec. by Clarissa M. Roehr and J. H. Beal.

No. 335. Miss Anna Marie Farrell, Vacaville, California, rec. by Clarissa M. Roehr and J. H. Beal.

No. 336. Jennie Maguire White, 416 Hayes St., San Francisco, California, rec. by Clarissa M. Roehr and J. H. Beal.

No. 337. Robert Owen Brown, Cooper, Texas, rec. by R. H. Needham and R. H. Walker.

No. 338. Edward Peter Genocchio, Holder St., Redwood City, Cal., rec. by R. H. Needham and Albert Schneider.

No. 339. Maynard E. Belson, Lott, Texas, rec. by R. H. Needham and R. H. Walker.

No. 340. George Harry Waltz, 1831 Mosher St., Baltimore, Md., rec. by H. A. B. Dunning and E. F. Kelly.

No. 341. Roy Ellis Tyler, 223 Washington Ave., Oil City, Pa., rec. by J. A. Koch and A. F. Judd.

No. 342. William Monroe Simpson, 2509 Beale Ave., Altoona, Pa., rec. by J. A. Koch and Albert F. Judd.

No. 343. Elisha Greene Morris, Jr., Athens, Ala., rec. by E. A. Ruddiman and H. M. Rhea.

No. 344. Robert Earl Covington, White House, Tenn., rec. by E. A. Ruddiman and H. M. Rhea.

No. 345. David P. Schindel, 47 S. Potomac St., Hagerstown, Md., rec. by J. W. England and H. A. B. Dunning.

No. 346. A. W. Frame, care Merck & Co., Rahway, N. J., rec. by B. L. Murray and Frank R. Eldred.

No. 347. R. C. Summers, Columbus, Ky., rec. by J. W. England and J. H. Beal.

No. 348. Robert Lee Thompson, 1718 Broad St., Nashville, Tenn., rec. by Anna G. Bagley and J. H. Beal.

No. 349. Frank Amann, Portsmouth, O., rec. by Anna G. Bagley and J. H. Beal.

No. 350. Earl Edward Goudy, Beach City, Ohio, rec. by Lewis C. Hopp and J. H. Beal.

No. 351. Yandell Paul Wooten, Lebanon, Tenn., rec. by E. A. Ruddiman and C. C. Young.

No. 352. James Pinkney Stowe, 26 South Tryon St., Charlotte, N. C., rec. by E. V. Howell and E. V. Zoeller.

No. 353. Thos. Aubrey Robinson, Main and Madison Sts., Memphis, Tenn., rec. by J. O. Bruge and E. A. Ruddiman.

No. 354. Henry Clay Shepard, Shelbyville, Tenn., rec. by W. I. Gates and J. O. Burge.

No. 355. Lester N. Jackson, 10th Ave. and Jefferson St., Nashville, Tenn., rec. by E. A. Ruddiman and William R. White.

No. 356. Frank Sevier Brown, National Soldiers' Home, Johnson City, Tenn., rec. by William R. White and J. O. Burge.

COUNCIL LETTER No. 3.

PHILADELPHIA, Sept. 29, 1913.

To the Members of the Council:

Motions No. 2 (Date of Sixty-second Annual Meeting; week beginning Monday, August 24, 1914), and No. 3 (Appropriation of \$35 for Badges and Bars) have each received a majority of affirmative votes.

In the election of the members of the Committee on Transportation by the Council, at the Nashville (1913) meeting, no representative was elected for Chicago, as provided by the by-laws (Chapter X, Article XI), and two representatives were elected for New York, one of whom was Caswell A. Mayo. Under date of 18th inst., Mr. Mayo moves that the name of Wilhelm Bodemann, of Chicago, be substituted for that of Caswell A. Mayo, of New York, as a member of the committee. The motion is seconded by F. M. Apple. It will be regarded as *Motion No. 5 (Election of Chicago representative to the Committee on Transportation)*.

The by-laws further provide for the election of a representative from St. Paul or Minneapolis, which was not done.

Motion No. 6 (Election of Representative to Transportation Committee from St. Paul or Minneapolis). Moved by G. M. Beringer, seconded by J. W. England, that E. Floyd Allen, of Minneapolis, be elected a member of the Committee on Transportation.

The following communication has been received:

The Wellcome Chemical Research Laboratories.

Frederick B. Power, Ph. D., LL.D., Director,
6 King Street, Snow Hill, London, E. C.
16 September, 1913.

Joseph W. England, Esq., Secretary of the Council, American Pharmaceutical Association, Philadelphia, Pa.:

My Dear Mr. England—It has given me very special pleasure to receive your letter conveying to me the congratulations of the American Pharmaceutical Association on the award of the Hanbury Medal. My appreciation of the very kind message is much enhanced by the fact of it coming from an organization which includes in its membership many old and esteemed friends, and in memory I also recall the much larger number of those whose friendship I have enjoyed and prized during the forty years of my membership in the Association, but who are now

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d Street.

resting from their labors. I shall be glad if you will be so good as to convey to the Council my thanks for the kind expression of remembrance on the part of the Association, and especially to Mr. Thomas F. Main and Professor Remington.

With my best personal regards, believe me to be

Very sincerely yours.

(Signed) Frederick B. Power.

The following communication has been received:

Pharmaceutical Society of Great Britain.

17, Bloomsbury Square, London, W. C.

September 13, 1913.

School of Pharmacy.

Dear Sir—I am in receipt of your letter of September 2d, and in reply beg that you will convey to the Council of the American Pharmaceutical Association my deep appreciation of the honor they have done me by electing me an Honorary Member. It is an honor that will stimulate me to further exertion for the advancement of Pharmacy.

Yours very truly.

(Signed) Henry G. Greenish.

J. W. England, Esq.

J. W. ENGLAND,

Secretary of the Council.

415 N. 33d St.

<>

U. S. PUBLIC HEALTH SERVICE.

(Changes in Pharmacists' Assignments, etc.)

Seidell, Atherton, Technical Assistant. Detailed to attend the meeting of the American Chemical Society to be held in Rochester, N. Y., Sept. 9 to 13, 1913. Aug. 26, 1913.

Miller, Charles, Pharmacist. Granted 30 days' leave of absence from Aug. 29, 1913. Aug. 25, 1913.

LaGrange, J. V., Pharmacist. Granted 1½ days' leave of absence from Aug. 22, 1913. Aug. 21, 1913.

Slough, Charles, Pharmacist. Granted 7 days' leave of absence from Aug. 21, 1913, under paragraph 214, Service Regulations. Aug. 21, 1913.

Carlton, C. G., Pharmacist. Granted 23 days' leave of absence from Aug. 1, 1913. Aug. 25, 1913.

Cannon, C. C., Pharmacist. Granted 10

days' leave of absence from Sept. 12, 1913. Aug. 27, 1913.

Knouse, R. E., Pharmacist. Granted 30 days' leave of absence from Sept. 10, 1913.

Miller, Charles., Pharmacist. Leave of absence for 30 days from Aug. 25, 1913, amended to read "30 days' leave of absence from Aug. 29, 1913." Sept. 6, 1913.

Ryder, L. W., Pharmacist. Granted 1½ days' leave of absence, July 25-26, 1913, under paragraph 214, Service Regulations. Aug. 30, 1913.

Southerland F. A., Pharmacist. Granted 6 days' leave of absence from Sept. 8, 1913, under paragraph 214, Service Regulations. Sept. 8, 1913.

Troxler, R. F., Pharmacist. Granted 2 days' leave of absence during the month of August, under paragraph 214, Service Regulations. Sept. 2, 1913.

LaGrange, J. V., Pharmacist. Granted 1 days' leave of absence, Sept. 18, 1913. Sept. 19, 1913.

Herty, F. J., Pharmacist. Upon arrival of Pharmacist Carlton, relieved from duty at Mobile, Ala., and directed to proceed to Louisville, Ky., for duty and assignment to quarters. Sept. 19, 1913.

Slough, Charles, Pharmacist. Upon arrival of Pharmacist Herty, relieved from duty at Louisville, Ky., and directed to proceed to Ellis Island, N. Y., for duty. Sept. 19, 1913.

Gibson, Frank L., Pharmacist. Leave of absence for 2 months and 26 days, without pay, from Sept. 13, 1913, amended to read "32 days' leave of absence, without pay, from Sept. 13, 1913." Sept. 17, 1913.

Relieved from duty at the Leprosy Investigation Station, Molokai, Hawaii, and at the expiration of leave of absence, directed to proceed to Chicago, Ill., for duty and assignment to quarters. Sept. 19, 1913.

Carlton, Charles C., Pharmacist. Upon arrival of Pharmacist Morris, relieved from duty at Detroit, Mich., and directed to proceed to Mobile, Ala., for duty and assignment to quarters. Sept. 19, 1913.

Morris, G. A., Pharmacist. Upon arrival of Pharmacist Gibson, relieved from duty at Chicago, Ill., and directed to proceed to Detroit, Mich., for duty and assignment to quarters. Sept. 19, 1913.

Official:

RUPERT BLUE,
Surgeon General.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,

From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

GRIFFITH, GEO.,

From Watervleit Arsenal, N. Y.,
To 439 48th St., Brooklyn, N. Y.

BJORK, NEIL J.,

From residence unknown,
To Ft. Mackenzie, Sheridan, Wyo.

GUERRERO, LEON M.,

From 37 Nueva, Ermita, Manila, P. I.,
To 117 Calle Nueva, Ermita, Manila, P. I.

AICKLEN, HENRY,

From Nashville, Tenn.,
To Field Hospital, Texas City, Texas.

IMPORTS OF OLIVE OIL NOT ADULTERATED.

In reply to the widely-spread newspaper reports that imported olive oil is largely adulterated with cotton seed oil the U. S. Department of Agriculture has issued the following circular of information:

Following the receipt of several inquiries as to whether a large part of the olive oil imported into the United States is adulterated with cotton-seed oil, the Department of Agriculture has made a special investigation

into the state of the olive oil admitted. The government's interest in the matter is twofold; first, to protect the people from getting adulterated olive oil; second, to protect the reputation of olive oil in the interest of olive oil producers in California, Arizona, and other olive-growing sections. Since 1900, the Department, through its various port laboratories, has examined samples from 2149 importations of olive oil. Of these, only ten were refused entry, and only three of these were refused entry for containing cotton-seed oil. These cotton-seed oil adulterations date back to 1908, when two shipments were found to be adulterated, and 1909, when one shipment was found to be adulterated. Since that time, there has been no shipment which has given evidence of cotton-seed oil adulteration. In 1910, seven shipments of olive oil were refused admission because adulterated with peanut oil, and since that time there have been no cases discovered of either cotton-seed oil or peanut oil adulteration. The addition of cotton-seed oil to olive oil, the government specialists report, is very easily detected. Indications therefore are that all olive oil admitted to the country and branded as olive oil has been pure olive oil, and has contained no cotton-seed or peanut oil. Occasionally the government discovers shipments of sardines in which the olive oil contains some cotton-seed oil. The experts point out that it would be illogical for the importer to bring into this country olive oil adulterated with cotton-seed oil, and pay a duty of 50 cents a gallon on the cotton-seed oil that is contained in the mixture. Similarly, nut oils are admitted under the tariff act, and the specialists say that it would be absurd for an importer to bring from Holland olive oil adulterated with peanut oil, and pay a duty of 50 cents a gallon on the mixture, when he could bring them over separately and avoid paying any duty on the nut oil.

THE SUBTLE POWER OF DISCOURAGEMENT

The most potent factor against success is *discouragement*. The man who becomes discouraged has already lost half of the battle of life.

Discouragement is the most *powerful* and yet the most *subtle* of all forms of human frailty. It is insidious because it is not usually recognized as a sin. Malice, hate, anger, dishonesty, all are disarmed, partially, because man recognizes that they are wrong. He fights them from the very knowledge that they are evils.

But he sees no evil in *discouragement*. He nurtures it and allows it to assume giant proportions, when he should strangle it at its first appearance. With its growth it saps vitality, destroys character, and converts the spine into a thing of jelly-like consistency. A man, made in the image of God, physically and mentally, becomes, in the latter state at least, a formless creature, under the baleful influence of *discouragement*.

The Germans have an old story that the *devil* once determined to sell his tools. So he took an invoice of them and set his price upon each one.

There was *hate, distrust, malice, theft, murder, lust*—all fearful and awesome tools, against which humanity has fought since man was driven from the *garden*, tools that have crushed the heart and tortured the mind, and have spread sorrow and despair throughout the world.

Then at last, he took down one tool. It was heavy and wedge shaped and the *devil* handled it with fondness.

When he set his price upon this tool, those who would buy the *devil's* outfit marveled. He had asked more for this one tool than for all the others combined.

"Why," asked one, "do you place so high a figure on this tool? What instrument is this that it can be more valuable than all the rest?"

"That," said his majesty, "is the one tool which I *use against man when all others have failed*. It has brought success to me in my fight against man, when, had I not had it, he would inevitably have been the victor. That is why I prize it so highly. This tool is *discouragement*. There is no tool like it," continued the Devil. "Men are armed against the others, because they know they are my tools and they hate me. All the other tools are terrifying, and man has learned that he must have his shield ready against them. But this one has none of the appearance of being mine. It does not warn by its appearance. Note its wedge shape. Man is *pierced by it, without knowing it*. It enters where others cannot; and once it has entered, it slowly presses open the wound till man is vitiated and he surrenders to me without an effort."

Discouragement never should be permitted to enter. Satan knew its power, and the man who permits that tool to escape the shield of *Confidence*, has an uneven fight for existence.

Confidence, alone, can defeat discouragement. It is the weapon of *God* against that of the *devil*; nothing can pierce it.

Have you that *confidence*? If so keep it ever in view; ever ready to repel the enemy. Keep that shield so that *Evil* may know it is ready to protect.

Don't let the wedge of the *devil's* tool of *discouragement* get a start. Hold up the head, brace the shoulders, and face the fight, and all the powers of *evil* shall not prevail against you.—J. M. Head in *Paint, Oil and Drug Review*.

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Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

A COMPREHENSIVE PLAN FOR A MEMBERSHIP CAMPAIGN.

THERE is probably no more important subject claiming the attention of the members of the American Pharmaceutical Association than the necessity for increasing the membership. While there has been a steady increase in the number of members, the Association has in no wise reached the bounds of its possibility in this direction. For a number of years, the Committee on Membership have been carrying on well conceived and well directed conservative efforts for an increase of membership which have been rewarded by a measure of success. They have gradually paved the way for a larger and more determined effort and a more comprehensive plan.

A study of the roll of members and their geographic distribution discloses the fact that there are a number of states in which we have very few members and in vast stretches of territory there are very few representatives.

It was not intended to limit the scope of the American Pharmaceutical Association to the United States and our insular possessions. The title "American" indicates that its proposed field was to be continental. The druggists and the allied interests of the Provinces of British North America should be made acquainted with the fact that they are eligible for membership and that their interests and problems are properly a part of the work of this Association. Unfortunately, our membership has not kept pace with the opening up and commercial development of these northern countries, and these fertile fields, as well as those of many parts of the United States, still await our cultivation for members and with well directed efforts should yield an abundant harvest.

This is a condition which should not be continued and indicates that as an

association we have not realized our possibilities nor lived up to the full measure of our usefulness. The time is fully ripe for the inauguration of an energetic campaign for members that shall be more than national; that shall now take up the northern divisions of this continent and eventually take in also the Southlands of North America. In these vast areas there are thousands of eligibles. The majority of these have, probably, not even been personally approached and invited to become members.

With every added member the Association is upbuilding its own strength, stability and influence, is adding to its financial as well as its numerical strength and increasing its field of usefulness to the body pharmaceutic.

THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION has already become a power in pharmaceutical journalism and its influence will become more and more pronounced with its increased circulation resulting from a larger and more representative membership. As its interests and circulation become broader, it will become more and more valuable as an advertising medium and as a means of molding sentiment, guiding opinion and shaping action.

The future advances in pharmacy, whether along the lines of commercial improvement, educational or legislative advancement or professional uplifting, must result from concerted action; from the combined efforts of pharmacists exerted through a strong national organization. It is axiomatic that with increase in our numerical strength will come corresponding increase of influence and power.

The plan now outlined proposes a large and active Committee on Membership under a general chairman who shall have supervision and control of the membership campaign. He is to be supported and advised by vice-chairmen, and each vice-chairman is to have charge of a district comprising a number of contiguous states or provinces. A committee is appointed for each state, insular possession and province; the first named member being the chairman of the said local committee. In the appointment of the local committees it has been the intent, wherever feasible, to select members residing in different sections so as to cover more thoroughly the entire field.

The purpose is to have each local committee through its chairman and members make a thorough canvass of its territory and to see that every person eligible to membership is invited to become a member. Where possible, the solicitation should be by personal interview and where that is not possible, then by mail. At stated intervals each local chairman is to report to his vice-chairman who will submit the report to the general chairman and advise and co-operate with him in furthering the movement.

In addition to these committees formed on geographic lines, there are a number of interests that can be best reached through special sub-committees of co-workers, who will co-operate directly with and report to the general chairman. For this reason, we have the sub-committee on Food and Drug Chemists, Pharmaceutical Faculties, Boards of Pharmacy, Wholesalers and Manufacturers, Pharmacists in the Government Service, Women Members, etc. It is noted that many allied with these branches of pharmacy have not, as yet, joined the American Pharmaceutical Association.

This comprehensive scheme may be criticized by some who have not given much thought to the subject, as somewhat theoretical, and as a rather large un-

dertaking necessitating an extensive committee. However, the plan is based upon a careful and earnest study of the conditions and possibilities. We want to conquer a host and to do this necessitates an army, and this army must be well officered and well disciplined. Moreover, the entire army and membership must understand the necessity and righteousness of the cause and enter the campaign with determination and enthusiasm.

Have we considered the possibilities the situation offers? There are now at least five thousand eligibles who should be members of this Association. Is it too much to expect that by a united effort at least one-half of that number can be induced during this association year to unite with our organization? This certainly is not too ambitious an expectation and we should make this number the minimum of our aim.

To accomplish this, the Committee on Membership should have the support and co-operation of every member of the Association as well as the enthusiastic labor of those who have been named on the Committee.

<□>

GEORGE M. BERINGER.

THE TREASURY DECISION REGULATING THE IMPORTATION AND SALE OF COCAINE.

THE recent Treasury Decision No. 33456, regulating the importation and sale of cocaine is one which, if its validity be sustained, will have far-reaching consequences upon every branch of the drug trade, and so far as the retailer is concerned, make it practically impossible for him to dispense the drugs included, even on physicians' prescriptions for legitimate purposes.

The text of the decision, and form of declaration required is as follows:

"Importations of cocaine, coca, their derivatives or preparations containing cocaine or its derivatives shall be released only upon the filing of a declaration of the importer, properly sworn to, made upon the following form:

DECLARATION FOR COCAINE, COCA, THEIR DERIVATIVES AND PREPARATIONS.

"Inasmuch as the indiscriminate and promiscuous use of cocaine, coca, their derivatives or preparations containing cocaine or its derivatives, is dangerous to the health of the people of the United States, and section 11 of the food and drugs act, June 30, 1906, prohibits the importation of any food or drug product into this country which is "adulterated or misbranded within the meaning of this act, or is otherwise dangerous to the health of the people of the United States" * * *, "I subscribe to the following declaration as a condition precedent to the release of the merchandise enumerated therein.

DECLARATION.

"I, (1), of the (2), (3), do solemnly and truthfully swear that the cocaine, coca, their derivatives or preparations containing cocaine or its derivatives, more particularly described in attached invoice, bill of lading, or bill of sale, purchased from (2), by (2), the day of, 191.., are intended in good faith for use in a manner not dangerous to the health of the people of the United States, and that I will keep, or have kept, a complete record of (4) in (5) packages of cocaine, coca, their derivatives or preparations containing cocaine or its derivatives, and will secure from each and every person, firm, or corporation to whom the goods

(1) Name of individual or representative.

(2) Name of individual, firm, or corporation.

(3) Importer, manufacturing chemist, or wholesaler, retailer, or any other dealer in or purchaser of drugs, as the case may be.

(4) Number of pounds, pints, ounces, etc

(5) Number.

herein described, their derivatives, or preparations shall be sold, in whole or in part, a declaration of this form, which declaration shall be kept on file for a period of not less than three years and be open to inspection of any properly accredited Government inspector.

"I further do solemnly and truthfully swear that each and every package of cocaine, coca, their derivatives, or preparations containing cocaine or its derivatives, more fully described in attached order, bill of lading, or bill of sale, shall bear a statement, in the form prescribed by the regulation for the enforcement of the food and drugs act of June 30, 1906, of the amount of cocaine or cocaine derivatives contained therein.

"I furthermore solemnly and truthfully declare that I will make a report to the Bureau of Chemistry of the Department of Agriculture, Washington, D. C., not later than January 15 of each year of the amount of cocaine, coca, their derivatives, or preparations containing cocaine or its derivatives on hand the first day of January of that year, the amount imported or received during the preceding 12 months, and the disposition made thereof."

.....

"Declared to before me this day of, 191...

"The above declaration may be filed by the importer at the time of entry of merchandise of the character in question; but if not so filed, it shall be required before the release of the goods.

JAMES F. CURTIS, Assistant Secretary."

It will be noted that the decision specifically provides that the party subscribing to the declaration "will secure from each and every person, firm or corporation to whom the goods herein described, their derivatives, or preparations shall be sold in whole or in part, a declaration of this form, which declaration shall be kept on file for a period of not less than three years and be open to inspection of any accredited Government Inspector."

It further provides that returns shall be made to the Bureau of Chemistry of the Department of Agriculture not later than January 15, of each year, of the amount of the products and their derivatives on hand on January 1 of that year, the amount received during the last twelve months and the disposition made thereof.

In form the decision is mandatory on every person, firm or corporation, under all conditions and every circumstance that may arise, whether it be in compounding prescriptions, furnishing any of the commodities named to the Government service or even the taking of samples by the Bureau of Chemistry, for the reason that there is no saving clause or exception whatsoever contained in the decision.

If the decision is legal, that is, if it be upheld by the courts, it will mean that Congress has the right to delegate power to an administrative officer to refuse admission to, or to determine the conditions under which, not only cocaine and its derivatives, but every other potent drug, may be admitted to the United States, and subsequently disposed of both in interstate and intrastate commerce, for there are no potent drugs that are not "dangerous to the health of the people" when indiscriminately and promiscuously used. In other words, if such a delegation of legislative power is valid, the administrative officers of the Treasury Department would have greater power to regulate commerce between and within the several states than Congress has ever pretended to have or has ever attempted to exercise.

The administrative officers of the Bureau of Chemistry have stated that they will accept legitimate prescriptions on file with retail druggists as complying with

the terms of the decision as to returns, but it is difficult to see where they find authority to set aside any of the provisions of the decision. No such authority is granted them under the decision. The decision is mandatory in its terms and makes no provision for exceptions. Furthermore the purchaser has made an affidavit that he will demand such a declaration before he disposes of any of the commodities in whole or in part, and the retail druggist will therefore be required to obtain a sworn declaration with each and every prescription he may receive before he can dispense the same.

As it will be impossible to obtain a sworn declaration with every prescription, and as no other provision has been made whereby these commodities can be sold, it follows that the retail druggist cannot dispense cocaine, coca, their derivatives or preparations on prescriptions not accompanied with a sworn declaration.

If the sale is made only on a sworn declaration, the retail druggist will violate state law, and in the District of Columbia, a law enacted by Congress, which requires that such sale shall be made on a prescription of a physician, dentist, or veterinarian. Can an Act of Congress be set aside other than by Congress or the Courts?

It may be further pointed out that no provision is made whereby any branch of the Government Service, Public Health Service, Hospital Corps of the Army or Navy, may be able to obtain any of these commodities except on filing a sworn declaration with the seller; nor can the commodities be transported from station to station otherwise than on this declaration. An inspector of the Bureau of Chemistry could not obtain samples of the articles covered by the decision except on the presentation of such declaration, and he would be compelled to obtain a like declaration before he could turn over the samples to the Bureau of Chemistry, because he has made an affidavit to that effect, and there is no proviso or saving clause in the decision to meet such contingencies.

I therefore submit that the decision is impracticable and cannot be carried out; that it imposes burdens that cannot be overcome; that it is prohibitory in every sense of the word; and that it places conditions upon licensed pharmacists, physicians, dentists and veterinarians that cannot be complied with, and restricts them in many cases where the dispensing of the said commodities is necessary.

S. L. HILTON.



OFFICERS FOR 1914-1915.

JUST as this issue is ready for the press the report of the Board of Canvassers comes to hand announcing the election of the following officers for 1914-1915:

President, Caswell A. Mayo, New York.

First Vice President, L. D. Havenhill, Lawrence, Kan.

Second Vice President, C. Herbert Packard, East Boston, Mass.

Third Vice President, Charles Gietner, St. Louis, Mo.

Members of the Council, Otto F. Claus, St. Louis; M. I. Wilbert, Washington, D. C.; William B. Day, Chicago.

The JOURNAL extends congratulations to the newly elected officers—congratulations in which all members of the Association, including the other nominees on the ticket, heartily join.

J. H. BEAL.

Book Reviews

LES APOTHICAIRES DIEPPOIS DU XVII^E au XIV^E SIECLE. Par André Liôt.
Brochure de 89 pages. Société Libre des Pharmaciens de Rouen. 1912.

Well nigh twenty years ago, the writer began the study of local pharmaceutical history by spending leisure hours during vacation in newspaper offices, going through the old files, page for page, in search of material that might serve as documents. He was criticized by a good friend who claimed that the editing of local documents was not history, nevertheless he continued and even today is happy if he can find a leisure moment to rummage through a volume of old newspaper files in the Library of the State Historical Society. It is perfectly true that the collection and editing of documents is not writing history, yet historical generalization based on intuition, as it were, is worse, it is false history. Too many mistakes have been made in the attempt to write history without a knowledge of facts as they may be found in documents ordinarily not known to the so-called historian.

If one reads the edict of Federic II, as published in the histories of pharmacy, the thinking reader naturally wonders why the pharmaceutical millenium did not reign during the thirteenth and fourteenth centuries. Yet these were the times in which modern European pharmacy but had its birth, and not an easy one, but one accompanied with much travail. In order to appreciate the contradiction between edict and practice, it is necessary to understand the political situation of the Holy Roman Empire, and to be further told, if necessary, that, as Freytag expresses it in his "Bilder aus der deutschen Vergangenheit," the edicts were not obeyed in the country in which they were issued, much less in other countries that constituted the political conglomerate ready to fall apart as soon as roughly handled by a political opponent to the royal *primus inter pares*.

In France the political situation was not dissimilar to that in Germany and it cannot be good history to write an account of the pharmaceutical past of France simply because the author possesses a fund of information concerning the Paris corporation. It has been very gratifying, therefore, to those who are seriously interested in the past of our calling, to see how much study is being bestowed upon the local development of French pharmacy. A number of more or less pretentious monographs have appeared in the last decade and the good work seems to continue without interruption. The latest monograph has appeared under the above title as one of the "Contributions to the history of pharmacy in Normandy." It was presented as a thesis for the doctor's degree at Lille by the author, who is "Préparateur de Chimie et de Radiologie" at the General Hospital at Rouen, and has been published by the "Société Libre des Pharmaciens de Rouen" which has the exclusive sale of the book.

To the student of American pharmaceutical history, the inventories of medicine chests made up at Dieppe, at one time the principal seaport of France, are

of special interest. They reveal the names of medicaments with which the sea-going crafts, that crossed the Atlantic to New France, were provided. No doubt, these medicaments were not only used en route but in the American ports as well in which these vessels were anchored. Hence these lists may throw some light upon the materia medica available to the early, though transient, practitioner on this side of the Atlantic.

While these monographs are making better known the past of French pharmacy and will ultimately make possible the writing of a true history of French pharmacy, they are serving another equally useful purpose at the present time. Whereas some of the modern commercial tendencies seem to weaken the foundation on which professional pharmacy rests, these historical studies strengthen it. Pharmacy is more in need than ever of scientific research on the one hand and of historic research on the other. May both receive greater support with each year and thus bring about the pharmaceutical renaissance of the future.

EDWARD KREMERS.

GESCHICHTE DER CHEMIE. Kurzgefasste Darstellung von Dr. Thor. Ekecrantz, O. Professor der Chemie und Pharm. Chemie an dem Pharmazeut. Institut zu Stockholm. Aus dem Schwedischen Original von Verfasser Bearbeitet. Ein Bd. pp. viii, 230 mit huenfundzwanzig Bildnissen im Text. Leipzig. Akademische Verlagsgesellschaft M. B. H., 1913.

Inasmuch as the book is not provided with a preface, the reader is left to surmise what induced the author to publish this history and what principles guided him in writing it. There are eight chapters, the first four of which are devoted to the period of antiquity, the alchemistic period, the iatrochemical period and the phlogistic period respectively. Chapter five is devoted to the downfall of the phlogistic doctrine. Chapter six bears the heading "Chemical research after Lavoisier up to the middle of the nineteenth century," and chapter eight that of the "Development of theoretical chemistry from the middle of the nineteenth century up to the present time. Chapter eight is a three page, hence totally inadequate account of the "Development of chemical instruction" and comprises chemical literature as well as institutions for instruction.

Chapters one to four are an attempt at a brief but well rounded presentation of the guiding theories as well as the practical accomplishments of the respective periods. Detail is in large measure suppressed by placing short biographical sketches of the principal representatives at the end of the respective chapters. The next three chapters are devoted to theoretical considerations only. The short biographies with occasional portraits are again appended, hence in no way mar the presentation of conflicting theories and hypotheses.

Those of us who are interested in the renaissance of the history of the sciences welcome every new treatise as a manifestation of the spread of the attention that is being devoted to this, so long neglected, aspect of the natural sciences. It does not follow, however, that each attempt at writing chemical history comes up to our expectations. The course in the history of chemistry as a part of a college or university education is still in its formative stages and teachers do not appear to have come any where near to an agreement as to what ought to

be taught, much less how it should be taught. To what extent Ekecrantz's History of Chemistry will meet the wants of a text by such teachers of the subject as desire a text for this purpose remains to be seen.

It is no easy matter even for those of us who have been interested in the history of chemistry for a period of years, to place ourselves into the mental attitude e. g. of the phlogistonists, much less to acquire the point of view of the alchemists or ancients. This desirable attitude is even more difficult of attainment by e. g. the senior of a college course, who has only too often gained the impression that nothing in chemistry is worth knowing that precedes Ostwald e. g. in physical chemistry or Kekulé in structural chemistry, etc., or who at least believes heartily in the dictum that chemistry is a French science that had its birth with some of the remarkable deductions by Lavoisier. This difficulty is not overcome if, e. g. in discussing the conception of matter by the ancients, the student is told that Thales regarded water as prime matter from which all other substances are derived, or that Anaximenes regarded air and Heraclitus fire as the "Urrstoff." Such statements without a word of comment as to the reasons why the Greek philosophers made these assumptions naturally cause the student to smile disdainfully at Greek philosophy though the teachings of Aristotle played so important a role in human thought for almost two thousand years. Rather than to encourage the self-satisfied youth of the twentieth century in his notion that all who preceded us were fools we should endeavor more carefully to cause them to appreciate the achievements of those on whose difficult labors our more conspicuous scientific superstructure has been reared.

EDWARD KREMERS.

THE BOY IN THE MAN.

It is no use talking and moralizing about the weight of years, the dignity of position, or the pressure of keeping up appearances. Somewhere under the public skin of every good, decent man, there lives, breathes, and moves a big boy! Just a boy, with all a boy's dreams and aspirations, even though the influence of the world has "laid its heavy yoke upon the old white-bearded folk who strive to please the King," and he knows in his heart of hearts that the glamour of it all is not a solid structure. "We hope, we remember, we 'dream' to the last!" God keep us dreaming the bright dreams and imaginings of youth! There is nothing in later life half so pleasant.—*Robert Lloyd.*

The Sixty-First Annual Convention

Held at Nashville, Tennessee, August 18-23, 1913

MINUTES OF THE HOUSE OF DELEGATES.

FIRST SESSION—MONDAY EVENING, AUGUST 18, 1913.

The first session of the House of Delegates was called to order in the auditorium of the Masonic Grand Lodge, on Capitol Boulevard, at 8:15 p. m., by W. C. Anderson, of Brooklyn, who had presided at the organization of the House of Delegates at Denver last year.

The acting chairman said he would like to explain that, in order to organize the House of Delegates, the first thing necessary would be the reception of the credentials of the different delegates approved by the Council. It seemed that there had been some misunderstanding as to how this matter was to be handled, and many delegates had never handed in their credentials to the Secretary, to be referred to the Council for action. For this reason, he expressed the opinion that it would be impossible to properly organize the House at this time, and he suggested an adjournment to Tuesday evening at 7:30 o'clock. This was to give opportunity to have announcement made at the next general session of the Association that all delegates should hand in their credentials at once, so that the Council could pass on them, and a full list be presented at the organization of the House of Delegates at Tuesday evening's session.

Thereupon, upon motion of H. M. Faser, of Mississippi, seconded by C. F. Nixon, of Massachusetts, an adjournment was taken to Tuesday evening, at 7:30 o'clock.

SECOND SESSION—TUESDAY EVENING, AUGUST 19, 1913.

The second session of the House of Delegates was called to order in Room "A" of the Masonic Grand Lodge, by Acting Chairman W. C. Anderson, at 7:55 p. m.

The Chair announced that the first order of business was the calling of the roll of delegates whose credentials had been approved by the Council. He said that, as the roll was called, if there were any substitutions to be made, they should be made at this time, so that the roll might be as complete as possible. Any delegate present whose name was not called, and who had been authorized to take the place of one whose name was called, should indicate the fact as the roll-call proceeded.

As Miss Clarissa M. Roehr, the Acting Secretary of the House, proved scarcely equal to this task, on account of the unusual amount of noise in the room, the Chair appointed Hugh Craig, of New York, as Assistant Secretary, who proceeded to call the roll of delegates. (See *October Journal*, p. 1230).

The Chair stated that the courtesy of the floor would be extended to any delegate present whose credentials had not been passed upon by the Council.

The Chair declared the election and installation of officers for the ensuing year to be the next order of business.

C. M. Snow, of Chicago, said that, in order to bring the selection of officers of the House of Delegates in accord with the manner of selection of officers of the Association, he would move the suspension of the by-laws, and that the officers now presiding should continue in that capacity during the present session of the House of Delegates. This motion was seconded by Otto Raubheimer, of Brooklyn, and unanimously carried.

The Chair appointed the following as a Committee on Resolutions: Messrs Hugh Craig, of New York; Otto F. Claus, of St. Louis; Ernest C. Marshall, of Boston; L. C. Lewis, of Alabama, and L. A. Brown, of Kentucky. The Chair explained that all resolutions presented to this body would, after discussion, if the House saw fit, be referred to this Committee on Resolutions, who would consider them in the light of the discussions had thereon, and at a subsequent House session of the House of Delegates would make report, and recommend the adoption or rejection of the resolutions proposed.

The Chair stated that the House would now listen to the reading of any communications from associations, sections, or from the Council that might have come to the Secretary's desk, but Miss Roehr reported that none had been received.

The Chair stated that the next order of business would be the calling of the roll of delegates for reports, resolutions and communications, all of which should be in writing. He suggested that the best method of procedure was to call the roll of the associations and institutions that had been accorded a status in this body, and have the delegates present respond with a few words of greeting, if they would, or by the presentation of such resolutions as their associations had sent to this body, with such comment as they chose to make upon them.

Thereupon, Assistant Secretary Craig began reading the list of State Associations and Colleges of Pharmacy entitled to membership in the House of Delegates.

When the New York Pharmaceutical Association was reached, the following resolution from the New York Association was presented:

WHEREAS, Under the present plan of having the revision of the Pharmacopœia of the United States every ten years, and whereas, this plan is inadequate to meet the demands of the times, therefore, be it

Resolved, That the New York State Pharmaceutical Association appoint a committee to confer with the American Pharmaceutical Association in the effort to devise a method whereby the periodical revisions of the United States Pharmacopœia will more correctly represent the progress of pharmacy.

On motion duly seconded, the resolution just read was ordered received and referred to the Committee on Resolutions.

Mr. Caswell A. Mayo, on behalf of the State of New York, offered a resolution requesting the Association to assist in procuring legislation to provide a separate license for the sale of alcohol for medical and mechanical purposes.

John C. Wallace, of Pennsylvania, moved the adoption of the resolution, but Chairman Anderson, suggested that it be referred to the Committee on Resolu-

tions, with favorable recommendation from this body. Mr. Wallace indicated his acceptance of the amendment, and the amended motion was put to a vote and carried.

Assistant Secretary Craig continued his reading of the list.

When the Pennsylvania Pharmaceutical Association was reached, Mr. Wallace stated that he thought there was a series of resolutions relating to the same subject-matter as that upon which Mr. Mayo, of New York, had just offered a resolution, emanating from the Pennsylvania Association, and he thought these had been turned in to the General Secretary.*

Assistant Secretary Craig continued his reading of the list.

When the New York Branch of the American Pharmaceutical Association was called, the following resolutions were submitted, and on motion made and seconded were received and referred to the committee on Resolutions:

Resolved, That inasmuch as the American Pharmaceutical Association has invited Colleges of Pharmacy to offer as a prize to students a year's membership in the Association, the Association provide an appropriate certificate to be given to the students meriting the prize membership.

Resolved, That the New York Branch of the American Pharmaceutical Association petition the parent Association to go on record in favor of a legal requirement with reference to methyl alcohol that will differentiate it from ethyl alcohol.

Resolved, That the New York Branch of the American Pharmaceutical Association is in favor of and will assist in the establishment of a home for the American Pharmaceutical Association.

Resolved, That it is the opinion of the New York Branch of the American Pharmaceutical Association that there is a crying need for reform in legislation exempting drugs dispensed by physicians from the requirements of the food and drugs act.

Resolved, That the members of the New York Branch of the American Pharmaceutical Association hear with much regret that the Council of the American Pharmaceutical Association has receded from the action taken at the Boston meeting to continue the publication of the Report on the Progress of Pharmacy in the form of a separate bound volume.

Prof. Remington, of Philadelphia, suggested that the passage of this resolution was unnecessary, as the Council had decided to publish a Year Book, and the Association had approved that decision.

The Chair stated that the Committee on Resolutions would no doubt be glad to have this knowledge, but it would do no harm to let the resolution take the usual course and go to the Committee, and it was so ordered.

The last resolution coming from the New York Branch the Assistant Secretary read as follows:

Resolved, That it is the sense of the New York Branch of the American Pharmaceutical Association that to assign women members to a separate section and to admit non-members to membership in a section of the Association is inadvisable, and that any organization for women should be in nature and name an auxiliary, designed chiefly for those who are not members of the Association.

The resolution was ordered to take the usual course, and be referred to the Committee on Resolutions.

The Assistant Secretary concluded the reading of the list of institutions entitled to membership in the House of Delegates, and the Chair stated if there were any other delegates present who had any resolutions to offer, they might be presented at this time.

*No such resolutions were received from the Pennsylvania Association.—*General Secretary*

Prof. Albert Schneider, of San Francisco, said he had not been instructed by the California Association as to what resolutions to submit or report, and he begged to submit the following on his own responsibility, assuming that it would receive the sanction of the California Pharmaceutical Association:

Resolved, That the House of Delegates of the American Pharmaceutical Association recommend that the American Pharmaceutical Association go on record as approving the college graduation prerequisite to State Board examination.

Prof. Philip Asher, of New Orleans, said that while he was heartily in accord with the spirit of this resolution, he thought it was out of order, for the reason that, as he understood, no resolution could be presented unless it emanated directly from a State Association or College of Pharmacy.

The chair ruled that, as Prof. Schneider was a regularly accredited delegate to this body, he was empowered to present resolutions, whether sent directly by his Association or not.

On motion of Mr. Wallace, duly seconded, the resolution just read was then referred to the Committee on Resolutions.

Mr. F. T. Gordon, of Philadelphia, presented the following resolution:

WHEREAS, Increased membership and influence can be secured by this Association by a wider propaganda as to its scope and work, and such propaganda is best performed by individual effort, and whereas, at present there is no suitable badge indicating membership in the Association, be it

Resolved, That the Council be authorized to approve the production of a convenient button or pin style of the official badge of the Association that may be worn conveniently at all times by members, and that this form of the official badge be distributed to dues-paid members by the Treasurer.

Mr. Gordon explained that his idea was that, by adopting a little button that could be worn on the lapel of the coat, large enough to be visible and yet not conspicuous, the attention of druggists, clerks and apprentices would be attracted thereto, thus giving the wearer opportunity to explain what the American Pharmaceutical Association stood for. The doctors would also be interested, he thought, and it would especially appeal to them to know that the wearer of the badge was a member of the American Pharmaceutical Association. By this means each member could become a "recruiting officer" for new members.

Mr. Wallace suggested that the author of the resolution wanted to "authorize" the Council to do this, when this body could not authorize the Council to do anything. He suggested that the word be changed to "request."

Mr. Gordon responded that this was simply a skeleton resolution, written hurriedly, with the idea that it would be referred to the Committee on Resolutions, which Committee would put it in proper shape, and he said he would be glad if it would.

On motion of Mr. Hynson, of Baltimore, duly seconded, the resolution was then referred to the Committee on Resolutions.

Mr. Nitardy, of Denver, offered the following resolution:

WHEREAS, There can still be found druggists professing to practice pharmacy who do not possess a copy of the U. S. P. or N. F., be it

Resolved, That the American Pharmaceutical Association further the enactment of State legislation, or rulings by boards of pharmacy, that will require each pharmacy and drug store to possess a copy of the text of the latest edition of the United States Pharmacopœia and the National Formulary.

Mr. Freericks, of Cincinnati, said that this was one of the provisions of the

Pennsylvania pharmacy law, and he believed it one of its best provisions. He heartily favored the sense of the resolution, and moved that it be referred to the Committee on Resolutions. This motion was duly seconded and adopted.

The Chair stated that if there were no other resolutions to be offered from the delegates present, the House would now listen to the reading of the resolutions that had been referred to this body through the Council of the American Pharmaceutical Association.

Assistant Secretary Craig stated that these had been offered in the name of Prof. Beal, and read the following, each of which, on motion made and seconded, was ordered received and referred to the Committee on Resolutions:

Resolved, That the American Pharmaceutical Association hereby voices its approval of the movement in favor of one cent letter postage.

Resolved, That the American Pharmaceutical Association favors the so-called zone system of Parcel Post, whereunder charge for the transportation of parcels by mail is in proportion to the distance, and that it favors such a modification of the present Parcel Post Law as will prevent transportation by mail of prison-made articles of manufacture.

Resolved, That it is the sense of the American Pharmaceutical Association that in order to minimize the danger of the internal use of poisonous tablets intended for external use only, tablets containing toxic substances in sufficient amount to be dangerous to life if taken internally, should comply with the following requirements: (1) The form, size, markings and color of tablets intended for external use should be distinctive, and the color should preferably be of some water soluble dye, calculated to call attention to the dangerous nature of the tablet when dissolved. (2) Dangerously toxic tablets should be marketed and sold at retail in glass containers only. (3) The labels on such containers should be printed in red on white paper: should bear the word "poison" in large type, the death's head symbol, a caution against internal use and against placing the package in the vicinity of medicines to be used internally, and directions for the emergency treatment of accidental poisoning from the use of such tablets.

Resolved, That the American Pharmaceutical Association recommend to the Committees of Revision of the United States Pharmacopœia and the National Formulary that they consider carefully the advisability of including in these national standards recommendations for appropriate methods of indicating the dangerous character of poisonous tablets.

Resolved, That the American Pharmaceutical Association go on record in favor of such a revision of the United States patent and trade-mark laws as will tend to prevent the extortion of exorbitant prices for medicinal and chemical products patented or trade-marked in the United States, but that it is opposed to the provisions of the present measure, known as the Oldfield Bill, as unfair to inventors and manufacturers alike, and as tending to promote monopoly by compelling inventors and manufacturers for self-protection to keep secret the methods and processes for the preparation of newly-discovered medicinal substances.

Resolved, That the American Pharmaceutical Association request of Congress that it revise the existing internal revenue laws so as to provide for a special nominal tax upon the sale of alcohol for medicinal, scientific, mechanical or pharmaceutical purposes, and the sale of alcohol-containing liquids upon prescriptions, the tax-paid stamp issued for such purpose to be different in design from that issued to the retail dealer in alcoholic liquors for beverage purposes.

Resolved, That the American Pharmaceutical Association continue its affiliation with the National Drug Trades Conference.

Resolved, That the American Pharmaceutical Association go on record in favor of the supplementing of federal anti-narcotic legislation by the enactment of effective anti-narcotic laws uniform in all the states.

Resolved, That the American Pharmaceutical Association hereby record its appreciation of the valuable services of Honorable Francis Burton Harrison, Dr. Hamilton Wright and the members of the National Drug Trades Conference in the preparation of a bill for the federal supervision of the traffic in habit-forming narcotic drugs.

Resolved, That the American Pharmaceutical Association endorse and approve the measure known as the Harrison Bill H. R. 6282, now pending in the United States Senate, providing for the registration of dealers in narcotic drugs, as a reasonable and effective measure to provide means of tracing the principal habit-forming narcotic drugs from the time of their introduction into the United States until they reached the hands of the physician and the retail druggist, and that the Association hereby pledge its influence in favor of the enactment of the aforementioned bill.

Mr. Freericks stated that, if he understood correctly, this resolution referred

to the Harrison Bill now pending in the Senate of the United States. He did not feel that he would be justified in taking up the time of the House of Delegates at this juncture to discuss the provisions of the Harrison Bill, and would only say now that, in his judgment, these provisions were entirely wrong—at least so far as the interests of the retail pharmacists were concerned. He hoped to have the opportunity tomorrow of addressing himself more particularly to the subject, and his only object now was to let the Committee on Resolutions know that there was at least one delegate present who did not approve of this particular resolution.

On motion duly seconded, the resolution was then referred to the Committee on Resolutions.

The Assistant Secretary read the following resolutions offered by W. L. B. Brittain, delegate from the Ohio State Pharmaceutical Association:

Resolved, That the delegates of the American Pharmaceutical Association to the National Drug Trades Conference be instructed to give consideration to the feasibility of amending Section 7 of Regulation 7 under the Federal Food and Drugs Act so as to allow the sale of no products deviating from official standards.

Resolved, That the American Pharmaceutical Association recommend to the Committee on Revision of the United States Pharmacopoeia the reincorporation of the terms "castile soap" and "white castile soap" as synonyms for "sapo" in the forthcoming revision of the Pharmacopoeia.

Prof. Charles Caspari, Jr., said he thought all the pharmacopoeias stated that this was an olive-oil soap. He doubted whether the Pharmacopoeia had any right to introduce the name "Castile Soap," or "White Castile Soap," as a synonym for the official soap.

The resolution was then ordered to take the usual course.

The Assistant Secretary read the following resolution from the Washington State Pharmaceutical Association:

Resolved, That we earnestly request our senators and representatives in congress and instruct our legislative committee and our delegates to the National Drug Trades Conference, to urge as strongly as possible the passage of the Bacon-Hughes bill, which will procure better treatment for the hospital corps of the United States army.

The resolution was ordered to take the usual course.

The Chair asked if there were any other resolutions to be presented at this time, but none were offered.

Thereupon the Chair called for miscellaneous business as next in order, and stated that, under this head, he would suggest the offering of a motion to the effect that any resolutions coming from the different Sections which might have sessions after the House of Delegates adjourned, be referred, by common consent, to the Committee on Resolutions. He thought this was the only practical way to handle this proposition, as most of the reports handed in from the different Sections would have recommendations attached to them; and as the House of Delegates would not meet again until Friday night, when it would consider the report of the Committee on Resolutions.

Mr. Freericks said he would so move, but with the proviso that the Committee on Resolutions would give to those who might be interested in the particular resolutions introduced at the different Sections an opportunity to be heard. This motion was seconded by Mr. Nitardy and carried.

At this point, Mr. Mayo, of New York,—harking back to the subject of soap, presented the following:

“Fair are your daughters, Castile;
Brave are your sons in the field,
Pure all the products you yield.
Did I say ‘all?’—all but *soap!*”

The Chairman stated that this “resolution” would be referred to the Committee on Resolutions, for its information and delectation.

Mr. Marshall, of Boston, said he did not quite understand Mr. Freericks’ motion, and would like to inquire if the Committee on Resolutions was to hear discussions by those who opposed or favored resolutions.

Mr. Freericks said he had not intended to put his suggestion in the form of a motion; but he thought it would be understood, and granted as a courtesy to anyone who had introduced a resolution at a Section session, that that person should be given an opportunity to be heard. He thought it should be understood that the Committee on Resolutions would grant this.

Mr. Wallace objected to taking up the time of the Committee with discussions, and expressed the hope that no addition or amendment would be tacked onto the motions already passed.

Mr. Marshall said he could see good reasons why it might be well for the Committee to obtain information from those who favored or opposed any resolution, even at the cost of considerable time, as the Committee might not be correctly informed as to such matters, while others might be thoroughly informed. He thought there was force, therefore, in the suggestion of Mr. Freericks.

Mr. Freericks said he had thought that this privilege would be granted as a matter of courtesy, but since there seemed to be some objection to it, he would move that any resolution adopted by any Section and referred to the Committee on Resolutions of the House of Delegates, should be subject to the right of the introducer of the resolution to appear before the Committee.

Mr. Marshall seconded this motion.

Mr. Wallace moved as an addition to the motion of Mr. Freericks that notice of the time of meeting of the Committee be posted where it would be seen by the parties interested, and Mr. Freericks indicated his acceptance of this suggestion.

Mr. Wallace went on to say that he had no objection to anyone appearing before the Committee in advocacy of a resolution, provided those who were not in favor of it should also have equal opportunity to appear and present their views. The Chair said he did not believe that any committee that might be appointed,—and he was sure this applied to the one he had just appointed,—would deny the right of anybody who had anything to say on the subject of a resolution to appear before them.

Mr. Freericks’ motion as amended was then put to a vote and carried.

An adjournment was then taken to meet Friday evening, at 8 o’clock.

THIRD SESSION—FRIDAY EVENING, AUGUST 22, 1913.

The House was called to order by Acting Chairman W. C. Anderson, at 8:30 o'clock p. m.

The Chairman announced that the first order of business was the presentation of an additional list of delegates entitled to seats in the House. He called on Acting Secretary Craig to read the names of these additional delegates, which he did, as follows:

American Association of Food and Drug Officials—

Prof. Charles Caspari, Jr., of Maryland.

Brooklyn College of Pharmacy—

Dr. William C. Anderson.

New York County Pharmacutical Society—

J. L. Lascoff, Otto Raubenhemer.

Vermont State Pharmacutical Association—

A. B. Anderson and Mason G. Beebe.

Oregon State Pharmacutical Association—

D. O. Woodruff and Miss Kittie W. Harbord.

Connecticut Pharmacutical Association—

P. J. Garvin, Charles S. Rapelye, A. E. Lathrop.

The Chair stated that, without objection, these names would be added to the regular list of delegates entitled to seats in the House.

Mr. Craig here asked permission to interrupt the regular order by presenting the following resolution, action upon which, under the by-laws, would have to be delayed until another session:

Amend Chapter VIII, of the by-laws by changing the order of business so the election and installation of officers shall be the last order of business prior to adjournment.

The Chair stated that the resolution would take the usual course, and would have to lie over to another session.

Report of the Committee on Resolutions was called for as the next order of business, and the Chair suggested that, as it was quite a long report, time should not be taken to read it through completely, and then go back and consider the resolutions *seriatim*, but that each resolution as read should be acted upon at the time, thus obviating the necessity of reading the report twice. There was no objection to this, and it was so ordered.

Mr. Wallace suggested that each resolution as read should stand approved, unless there was objection to it, and the Chair said this rule would be followed.

Thereupon Acting Secretary Craig proceeded to read the report of the Committee, and there was no objection until the fifth resolution was reached and read:

Resolved, That the American Pharmaceutical Association is unreservedly in favor of the professional education of the pharmacists of this country, and that whenever the time seems ripe for such requirement, it most certainly should be enacted into law.

H. B. Mason, of Michigan, objected to the last resolution read as meaningless, and moved to strike it out. This motion was seconded by Mr. Wallace.

Mr. Beal thought the resolution could be made to mean something by a slight amendment, and moved to strike out everything after the word "pharmacists,"

and insert in lieu thereof the words, "as represented by a college education in pharmacy, of the grade recognized as standard by the American Conference of Pharmaceutical Faculties."

Mr. Mason thereupon withdrew his motion, and seconded a motion made by Mr. Wallace that the resolution as amended by Mr. Beal be adopted, and this was done.

Assistant Secretary Craig then proceeded with his reading of the resolutions, as follows:

Resolved, That the American Pharmaceutical Association go on record in favor of legally requiring Methyl Alcohol to be sold under a name that will differentiate it from Ethyl Alcohol or spirits generally, and under a poison label.

Resolved, That the establishment of a home for the American Pharmaceutical Association is desirable, and commendable, and that the Council appoint a committee to consider and formulate a plan for the establishment of such a home and to report at the next annual meeting.

Resolved, That we earnestly request our senators and representatives in Congress and instruct our delegates to the National Drug Trade Conference, to urge as strongly as possible the passage of the Bacon-Hughes bill, which will procure better treatment for the hospital corps of the United States army.

No objection was recorded against these resolutions, and they were considered adopted as read.

The Assistant Secretary then read the following resolution:

Resolved, That to assign women members of the American Pharmaceutical Association to a separate section and to admit non-members to membership in a section of the Association, is inadvisable, and opposed to the best interest of the association, and that any allied organization for women should be in nature and name an auxiliary, designed chiefly for those who are not members of the Association.

The reading of this resolution at once brought forth an indignant protest from Mr. Beal, who moved that the resolution be stricken from the record. This motion had a second in Mr. Mason.

Mr. Beal said the resolution first constructed a man of straw, and then proceeded to knock him down. Instead of coming out courageously and saying that the existence of the present Women's Section was not approved of, the resolution sought by innuendo to convey the impression that this Section was something which it was not, and something which might possibly be discreditable to the Association. The Women's Section did not do what was intimated here—separate the women from the other Sections. So far as the papers contributed by members of the Women's Section came properly within the sphere of the other Sections, they would be referred to and read in the other Sections. If they had papers on education and legislation, they would be presented to the Section on Education and Legislation; and so as to papers properly applying to the Section on Practical Pharmacy and Dispensing and the other Sections. This was well understood in the Women's Section, and had been repeated time and again. The women believed that there was a certain line of papers concerning woman's special work in pharmacy, such as their relation to hospital employment and other public employments of that kind, which could be more properly considered in a separate section of their own. They also felt that they would be more at ease to have a section of this kind for the consideration of such papers, as some of them were timid about appearing before the other Sections and engaging in the discussions on these topics. The matter of the creation of a Women's Section had been fully considered at the Denver meeting,

and it had been deemed advisable to grant the petition of the women who had asked for its establishment. Personally, he could see no good reason for denying to the women this opportunity for usefulness. Their Section as established and conducted was a credit to the American Pharmaceutical Association, and no Section during this meeting had presented an order of exercises more creditable or better adapted to the purposes for which it was created than the Women's Section. Moreover, this Section had brought thirty new members of the very best quality to the Association this year, and this had been the direct result of the stimulus given to their efforts by this separate representation. The meetings of the Women's Section did not interfere with those of the other Sections, and the hours assigned for the sessions of that Section were those which had hitherto been employed in shopping expeditions and automobile tours—for the entertainment of the ladies attending the meetings, who did not care to attend the regular Section sessions. Some of the women had said to him and to others: "We don't come here to be amused; we are really willing to do some work, and we should like to have an opportunity for showing, by some real constructive effort on our part, that we are interested in the work of the American Pharmaceutical Association." In conclusion, Mr. Beal said the women had made a splendid start with their new Section, and he thought it would be a shame to present to the Council of the Association a resolution like this.

Mr. Craig, after stating that he did not like to be accused of "stabbing in the back," but admitting that when a man came forward as the spokesman of somebody else who had a pet scheme he must expect "to get thumped," proceeded to take sharp issue with Mr. Beal as to the desirability of the new Women's Section. The resolution just read, he said, came from the New York Branch, to which it had been referred by the New York Women's Association—because the women pharmacists of New York did not want such a Section; nor had he found one woman pharmacist present at this meeting who favored the proposition, though he had spoken to all he knew upon the subject. He believed that any member of the New York Branch present would bear him out in the statement that the women pharmacists of New York City had said to them: "You look upon women in pharmacy as a joke. You are going to put us off in a fool's corner, with a high-cap, to play dunce, because you don't want us with you." Mr. Craig went on to say that he had no personal reason for opposing this Women's Section, except as stated in the proposed resolution, that it admitted non-members of the Association to its membership. He was unalterably opposed to that idea, and held to the proposition that a Section of the American Pharmaceutical Association should be composed only of members of the Association. He was not opposed to a Women's Auxiliary, nor to a Section for Hospital Pharmacists, if they wanted that to discuss hospital work, as this was a branch of pharmacy distinct from all other departments, except practical pharmacy, and might justify a Section. There were really good reasons for a Women's Auxiliary, as their advice and assistance through such an organization would be desirable and valuable. There they might discuss questions in which they were interested—questions of the druggist's home life, and other questions that could be better discussed by women. Recurring to his main point of objection, Mr. Craig said that if there was to be a Women's Section, to which

non-members of the Association were to be admitted, with equal consistency a Section for the Sons of Members could be established, for they had as much interest in the business of their fathers as the daughters. "Then," said Mr. Craig, "why couldn't his father, his brothers, his uncles and nephews come in for their Section, as well as the mother, the grandmother, the aunt and the sisters?" If there was any real reason for having a Section for non-members, he thought it should be called a Section for Non-Members, and a distinction should be made between members and non-members of the Association. He concluded by saying that there was nothing to his mind more discriminatory, or that reflected more upon the qualifications of women pharmacists, than to thus set them aside and apart from the regular membership and work of the Association—not as he thought, nor as the ones interested in this resolution thought, but as the women pharmacists themselves thought.

H. P. Hynson, of Baltimore, supported the position of Mr. Craig. After exploring the fact that such an unfortunate question should have arisen, as not in keeping with the dignity and high ideals of the American Pharmaceutical Association, he spoke for the right of those women who were qualified to become members of the Association to come in and take equal measure and effort in whatever was done, and said he wished them to have all the honor they deserved; but expressed himself as opposed to the establishment of a Section that would cast the women off to themselves, and separate them from the regular work of the Association. He knew their ability, and wished to see them have their proper place, and disclaimed any intention to reflect upon the women who had worked their way in pharmaceutical life; but if something in the nature of a Section was considered desirable, he thought it should be a Woman's Auxiliary, or a sort of Social Section, which should be "light and airy, and free from any care—light society, so to speak."

Prof. T. J. Bradley, of Boston, was an earnest advocate of the new Women's Section, and said it had been established only after proper consideration. Its officers had worked hard to establish it, and the disagreement here was more as to the name than the substance, and it mattered little whether it was called a Section or an Auxiliary. He thought it was only fair that the women should be given an opportunity to show whether they had a right to exist as a Section, and if they failed to show it the thing would fall of its own weight. He thought it would be an act of injustice to forestall them and abolish their own Section at this time.

After a short colloquy between Messrs. Beal and Hynson, following a question by the former as to whether this request to create the Section should have been refused to the women who believed they could do work in a Section of their own which they could not otherwise do, and a counter-inquiry by the latter as to what would happen if the American Medical Association were to establish a Women's Section, Mr. Beal went on to say that the ladies did think they could do valuable work, and had done it. They had brought into the Association this year more real, active, live members, of good material, than any other single instrumentality, except the General Membership Committee. It was not intended, he said, that all the ladies should be compelled to attend the sessions of this Section, any more than it was intended that all the members of the As-

sociation should attend the sessions of the Commercial Section, or any other Section. It was simply intended for those women who felt that there was work that they could do, and who wanted to do it. They had been given the opportunity, and they had made good. The Section's work, so far as he knew, had been thoroughly creditable to the Association, and he thought it would be a grave mistake to adopt the resolution offered.

In answer to a question by Doctor Ruddiman as to eligibility to membership in the Women's Section, Mr. Beal stated that there was no recognized membership list, but any woman who was a member of the family of a member in good standing in the Association might attend these sessions and take part in them—just as they might, and frequently did attend the general sessions of the Association and its other Sections.

Doctor Geo. F. Payne, of Georgia, while frankly confessing that he was not thoroughly advised on this subject, said he was in favor of giving the women any privilege they might ask for within reason. He even believed in female suffrage, despite the fact that he was from the South.

Doctor H. M. Whelpley, of Missouri, spoke at some length in advocacy of the new Women's Section. He said he had not attended the annual meetings of the American Pharmaceutical Association since 1884 without realizing that the membership might not always agree with the views that he held on questions, or that he should be even in perfect accord with the minority on other questions; but he was constrained to say that when, at the Denver meeting last year this proposition to establish a Women's Section was brought up, it struck him favorably. His only misgiving was as to the extent to which the women themselves would take hold of it. When he attended the first session of the Women's Section this year, he was very agreeably surprised to find the large attendance, the enthusiasm of the members, and the nature of the program, and he at once made up his mind that the venture launched at Denver was an assured success. The objection now made to it was a surprise to him. It went without saying, of course, that all were anxious to do anything and everything to advance the welfare of the Association. He did not know how the opposition to this movement started, or where it got its momentum, or just what it meant; but it certainly was not started, nor would it be continued, with any idea of hurting the Association; and, personally, he could see nothing dangerous to the Association in this effort the women were making. Therefore, he favored giving them a chance, and if it was not a good thing, it would die of itself. If there was anything in their form of organization or their constitution that was not in proper keeping with the ideals of the Association, that could be taken care of at the proper time and place, probably through the Council. These were details that would have to be worked out. He was reminded that when he was President of the Association, in its semi-centennial year of 1902, in order to familiarize himself with the history of the Association, he had gone back to volume I of its proceedings, beginning with the initial meeting in 1851, and even at that early date he had found that there was opposition to, and even indignation over, the proposition of some of the members to take their families with them to the annual meetings. It was regarded by some as an unjustifiable innovation, and the argument was made that the American Pharmaceutical Association

meetings were for the pharmacists, and for pharmacy and its progress, and nothing savoring of an attempt to introduce social features to detract from the real work of the Association should be tolerated. One Nestor of pharmacy even went so far as to say that if such a course was followed, he would stay at home. He expressed the hope that history of this character would not repeat itself. He favored trying out this experiment, and was sure the Association could live through it.

In answer to a question by Mr. Hyson as to whether he had any means of estimating how many members the American Pharmaceutical Association would have had in the absence of its social features at its annual meetings, Doctor Whelpley responded that of course this was merely a matter of opinion. Perhaps, he said, that old Nestor was right after all, and that the Association would have been better off in numbers if none of the families of members had been brought to the annual meetings except the sons.

Mr. Craig, in closing this discussion, and replying to some of the criticisms made, insisted that the men of New York were just as courteous as their Southern brethren, and that they were not being discourteous to the women of New York, because they did not want this Section. To the statement made that the new Women's Section had been the means of bringing in thirty new members, he replied that he knew it had kept out twenty women pharmacists of New York City who would not join because of it. They had succeeded there in getting one woman out of thirty, and could have gotten at least twenty, without question, if it had not been for this blow, as they considered it, aimed at them. They were not hitting at the new Section for what it was doing, but objecting because it made a sexual distinction, and admitted members into the Association without the payment of dues. They did not think this was fair, and in taking this position they were speaking for the women of New York City, not for themselves. All they asked was that the women be treated fairly.

Thereupon a vote by division was called for and taken upon the resolution under discussion, with the result that the motion to strike out was carried by a vote of 20 for to 5 against.

Acting Secretary Craig then read the following Resolutions, to which no objections were made, and which therefore, under the rule, stood adopted as read:

Resolved, That the Council be authorized to approve the production of a convenient button or pin style of the official badge of the Association, that may be worn conveniently at all times by members, and that this form of the official badge be distributed to members by the General Secretary upon the payment of a sum which will be commensurate with the cost.

Resolved, That the American Pharmaceutical Association hereby voice its approval of the movement in favor of one cent letter postage.

Resolved, That the American Pharmaceutical Association favor the so-called zone system of parcel post, whereunder charge for the transportation of parcels by mail is in proportion to the distance, and that it favors such a modification of the present parcel post law as will prevent transportation by mail of prison-made articles of manufacture.

Resolved, That it is the sense of the American Pharmaceutical Association that in order to minimize the danger of the internal use of poisonous tablets intended for external use only, tablets containing toxic substances in sufficient amount to be dangerous to life if taken internally, should comply with the following requirements: (1) The form, size, markings and color of tablets intended for external use should be distinctive, and the color should preferably be of some water soluble dye, calculated to call attention to the dangerous nature of the tablet when dissolved. (2) Dangerously toxic tablets should be marketed and sold at retail in glass containers only. (3) The labels on such containers should be printed in red on white paper; should bear the word "poison" in large type, the death's head symbol, a

caution against internal use and against placing the package in the vicinity of medicines to be used internally, and directions for the emergency treatment of accidental poisoning from the use of such tablets.

Resolved, That the American Pharmaceutical Association recommend to the committees of Revision of the United States Pharmacopœia and the National Formulary that they consider carefully the advisability of including in these books of national standards recommendations for appropriate methods of indicating the dangerous character of poisonous tablets.

Resolved, That the American Pharmaceutical Association go on record in favor of such a revision of the United States patent and trade-mark laws as will tend to prevent the extortion of exorbitant prices for medicinal and chemical products patented or trade-marked in the United States, but that it is opposed to the provisions of the present measure, known as the Oldfield Bill, as unfair to inventors and manufacturers alike, and as tending to promote monopoly by compelling inventors and manufacturers for self-protection to keep secret the methods and processes for the preparation of newly discovered medicinal substances.

Acting Secretary Craig next read the following Resolution:

Resolved, That the American Pharmaceutical Association request of Congress that it revise the existing internal revenue laws so as to provide for a special nominal tax upon the sale of alcohol for medicinal, scientific, mechanical or pharmaceutical purposes, and the sale of alcohol containing liquids upon prescriptions, the tax-paid stamp issued for such purposes to be different in design from that issued to the retail dealer in alcoholic liquors for beverage purposes.

Mr. Mayo, in commenting upon this resolution, said that he thought it might be well to make it more specific as to the designation "retail liquor dealers." The wording, "the tax-paid stamp issued for such purposes to be different in design from that issued to the retail dealer in alcoholic liquors for beverage purposes," might mean simply in the wording as referring to the design. He moved to amend by adding thereto, "and be specifically termed a druggist's license." The idea was, to make it perfectly clear that it was not in design only, but in title, that the stamp should be different.

Mr. Craig stated that this thought had occurred to the Committee, but they desired to include the sale of alcohol for medicinal, scientific, mechanical or pharmaceutical purposes, and they could not say that only druggists should have this license, for anybody who sold under that license must have it.

Mr. Beringer suggested that there were already two forms of certificate, one for the wholesaler and the other for the retail liquor dealer, the stamp-tax for the latter being lettered, "R. L. D."

Mr. Mayo said he had drawn up the resolution, presented from New York and that it was a matter he had been agitating for some years past. What the druggists wanted was some legislation or regulation providing for a new form of tax, and he had suggested a retail druggist's separate license. He thought he would press this point and ask that the tax-paid stamp issued for such purpose be different in design and designation from that issued for retail dealers in alcoholic liquors. He moved, therefore, to insert the words "and designation" after the word "design." The Government now required that the druggists should take out a retail liquor license; and in Mississippi, for example, if a man held this license it was *prima facie* evidence that he was selling whiskey. He had consulted several lawyers relative to changing the name of this license, and had been told by all of them that there was no chance to have it done; that it would be class legislation, and on that ground such a measure would not pass. He expressed the belief that there was a chance by simply showing the designation.

The Chair stated that the Committee on Resolutions was willing to accept this change, and if there were no objections, the resolution as read, with the words "and designation" inserted after the word "design," would be adopted.

The Acting Secretary read the following resolution, to which there was no objection, and it stood adopted:

Resolved, That the American Pharmaceutical Association continue its affiliation with the National Drug Trades Conference.

The Acting Secretary read the following resolution:

Resolved, That the American Pharmaceutical Association recommend to the Committees of Revision of the United States Pharmacopœia and the National Formulary that they include in the next revised issues of those volumes a minimum list of apparatus and utensils required for the proper manufacturing and testing of the products for which working processes are given.

Geo. M. Beringer said he did not think this idea was at all practicable; it might be sufficient today, and next month it might be insufficient. It was foreign to the idea of any of the Pharmacopœias to include a list of apparatus and utensils. For this reason, he moved to non-concur in this resolution.

Doctor Payne stated that, in his own experience, he had found a cut-and-dried list of apparatus not to be useful. One of the first things a pharmacist had to learn was to be able to utilize different kinds of apparatus for different purposes. He had found that students in drug stores always wanted to use the apparatus included in the text-books. It did serve a good purpose for the schools to put in a certain amount of apparatus, but he thought it would do the pharmacists no good to rely on a list like this, because, if made out properly, it should show how much range should be given in carrying out certain processes. It was very necessary for a man to learn to utilize the apparatus he had.

Mr. W. S. Richardson here seconded the motion of Mr. Beringer.

Mr. Beal said the resolution was simply a recommendation that it would be advisable for the Committees of Revision to include somewhere, perhaps in an appendix to the U. S. P. and N. F., a suggestive list—not necessarily a complete or perfect list—of utensils which a druggist contemplating a given manufacturing process would be expected to have. It struck him that it would have a good effect if such a list were included in the Pharmacopœia and National Formulary, in which event probably thousands of drug stores now unprovided with such utensils would soon become equipped with them. He thought this would be a good thing for the pharmacists of the country, for he thought the Association could do some good in this way, and expressed the hope that the resolution would not be voted down without due consideration.

Mr. Wallace heartily agreed with the views of Mr. Beal. He believed that if such a list of apparatus should be included somewhere in the Pharmacopœia, whether by way of appendix or otherwise, it would be a valuable addition thereto; and, even though it might be necessary to change it within a year or two, it would nevertheless be a valuable thing for the profession to have.

Mr. Mayo said he thought Mr. Beringer was mistaken in saying that such a list was entirely foreign to the Pharmacopœias of the world. He knew there was one in the French Codex, and Mr. Craig had informed him that there was one in the German Pharmacopœia.

Mr. Murray said his recollection was that the German pharmacists were obliged to have a specified list of apparatus on hand.

Continuing, Mr. Mayo said that what was proposed was, that the Pharmacopoeia and National Formulary should require a minimum outfit of some kind, and this could be made very simple, as it would contain very few things. He thought it would be a very desirable addition to the Pharmacopoeia, but doubted whether the Committee of Revision would take favorably to the idea, as he knew that several suggestions had been made to the Committee which they had not regarded with favor.

Mr. Beringer said he wished to make himself plain upon this subject: In Germany every pharmacist was licensed by the Government, and he was required to have certain articles and certain medicines in his store before he could secure a license to do business. Such conditions did not exist in this country. A Pharmacopoeia was, primarily, in this country today a legal standard for formulas and medicines. "We have never attempted to dictate to a man," said Mr. Beringer. "We don't attempt to dictate how many pieces of apparatus he shall have, and I don't believe, personally, it is feasible to prepare such a list of apparatus. I don't believe any two men on the Committee of Revision would agree as to the number of burettes or pipettes that should be required to make up such a list of utensils." He agreed with Doctor Payne that pharmacists should learn to make use of the apparatus they had, and get good results. He failed to see how the mere putting of such a list in the Pharmacopoeia could be construed as a legal authority, under our present laws, to have these utensils in stock. He did not consider that it was at all practicable to introduce such matter, and expressed himself as anxious that the Association should not place itself on record before the Committee on Revision in a useless or senseless way.

Mr. Mason said that two thoughts had occurred to him as he had listened to this discussion. First, it seemed clear to him that such contemplated list would be foreign to the nature of a book of standards, and would more appropriately appear, he thought, in a text-book on pharmacy. In the second place, he regarded it as surplusage, because he could not believe that any pharmacists who were qualified to carry out the assay processes of the Pharmacopoeia would not know what apparatus they ought to use. On the other hand, the exceptional man—if he might be so called—who did not carry out such assay processes, would not need such a list.

Doctor Payne said that all who had had experience knew that a man could take a half-ounce or ounce bottle, scratch a mark on it, and do just as accurate specific-gravity work as he could with a flask made by a pharmaceutical manufacturer. In a legal case which came up in Georgia, the prosecution made the point that the defendant had not taken the specific gravity correctly, because he did not use a pycnometer; and when they came to inquire what a pycnometer was, they found it was nothing but a specific-gravity bottle. At last, it all depended on accurate weighing and measuring. He suggested that by drawing the line too tightly in regard to apparatus, some legal liability might be incurred by failure to have the particular kind of apparatus called for by the Pharmacopoeia.

Thereupon, the motion of Mr. Beringer to strike out the resolution under consideration was put to a vote and carried.

Acting Secretary Craig read the following resolutions, to which no objections were offered, and which, therefore, under the rule, stood adopted as read:

Resolved, That the American Pharmaceutical Association go on record in favor of the supplementing of federal anti-narcotic legislation by the enactment of effective anti-narcotic laws uniform in all the states in order that the illicit traffic in habit-forming drugs may be better suppressed.

Resolved, That the American Pharmaceutical Association hereby record its appreciation of the valuable services of Honorable Francis Burton Harrison, Dr. Hamilton Wright and the members of the National Drug Trades Conference in the preparation of a bill for the federal supervision of the traffic in habit-forming narcotic drugs.

Resolved, That the American Pharmaceutical Association endorse and approve the federal measure known as the Harrison Bill H. R. 6282, providing for the registration of dealers in narcotic drugs as a reasonable and effective measure to provide means of tracing the principal habit-forming narcotic drugs from the time of their introduction into the United States until they reached the hands of the physician and the retail druggist, and that although we believe that the provisions of the measure would be improved by substituting in paragraph b, of Section 2, the words "a regularly licensed physician, dentist or veterinary surgeon" for the words "a physician, dentist or veterinary surgeon registered under this act," and that its purpose would be more completely fulfilled if it provided the same restrictions upon the dispensing physician as it does upon the retail pharmacist, the Association hereby pledges its influence in favor of the enactment of the aforementioned bill.

Resolved, That in the opinion of the American Pharmaceutical Association there is a great need for reform in the matter of the exemption of dispensing physicians and the drugs they dispense from the provisions of the state laws relating to the practice of pharmacy, and the Association go on record in favor of the enactment of state legislation tending to bring about this reform.

Mr. Craig, as Chairman of the sub-Committee on Resolutions, reported that the Committee had a resolution from the New York Branch, regarding the form in which the report on Progress of Pharmacy should be published, but which the Committee did not act upon, as they were informed by the Council that the action called for had already been taken. He also stated that there was a resolution in regard to castile soap, presented by one not a member of the House of Delegates, and this resolution had failed of action for that reason.

Mr. Beal said that if the resolution was rejected, for the reason that he was not a member of the House of Delegates, it was a mistake. If, on the other hand, it was rejected because the Committee did not favor the resolution, that was a matter within their province. He thought there could be no doubt that any member of this Association had the right to hand in resolutions to the House of Delegates, and the same could not be refused consideration for the reason only that he was not a member of the House of Delegates.

The Chair said that he would rule that the sub-Committee on Resolutions should present at this time, for action by the House, any resolutions or motions offered by any member of the American Pharmaceutical Association, or any Section thereof, or any delegate having a seat in this body, where such resolutions or motions had been set aside because of the decision of the sub-Committee on Resolutions.

Mr. Craig explained that this resolution was presented as coming from the Ohio State Pharmaceutical Association, which had no delegates seated, and for this reason he had brought the matter up. The Committee did not know what to do with it, under the circumstances. They thought they had no right to act upon it, believing that all resolutions must come from Sections or delegates. They did not believe a member could come into the House of Delegates

and offer a resolution. They had no information on the subject from which to form a conclusion as to whether this resolution did, or did not, come from the Ohio State Association.

Mr. Wallace endorsed the action by the Chairman of the Committee on Resolutions as absolutely correct. He did not believe that an organization having no accredited delegates to this body had a right to present resolutions.

Mr. Beal, by way of amplifications of his remarks just made, stated that the credentials of the Ohio representatives had been received and approved, and were in the hands of the House of Delegates; but at the last moment the gentleman who was delegated to bring them, one of the representatives, was unavoidably detained, and another member was kept from attending by the sudden death of his son. The resolution had been sent to him as General Secretary of the Association, and he had made a statement of the facts to the Council, that such resolutions had been offered, and that, with the approval of the Council he had transmitted them to the House of Delegates.

Mr. Craig said that, as Chairman of the Committee on Resolutions, he was glad to be enlightened on this point, although the Committee had not taken action on the resolutions for the reason stated.

The Chair here ruled that, after being presented to the House of Delegates and referred to the Committee on Resolutions, the Committee had no authority to say they were not legal, or in due form for action.

Mr. Craig acknowledged that the Committee stood corrected on this point.

Thereupon, Acting Secretary Craig read the following Resolution:

Resolved, That the delegates of the American Pharmaceutical Association to the National Drug Trades Conference be instructed to give consideration to the feasibility of amending Section 7, Regulation 7, under the Federal Food and Drugs Act so as to allow the sale of no products that deviate from official standards.

Mr. C. M. Woodruff said he did not wish to object to this resolution, or to provoke discussion, but the resolution involved a question about which there was destined to be a decided conflict between those who had proposed it and those who did not believe that all the work of years of investigation and thousands upon thousands of dollars invested in products not conforming to the U. S. Pharmacopoeia, but equally as good, in the opinion of thousands using them, if this proposition was not modified so as to protect them. The manufacturers of these products would fight, and fight hard, for what they believed to be their industrial rights. He thought some such organization as the National Drug Trade Conference should get together upon some modification of the law that would at once correct the evil complained of and protect their rights. The wording of the Richardson Bill—which was not such as had been approved by any association that he knew of—would have made it impossible to market any article found in the Pharmacopoeia under a name other than that given in the Pharmacopoeia. It would have put the homeopaths and eclectics out of business, practically, and would have deprived thousands of physicians of the use of preparations they believed they had the right to use.

Mr. Woodruff reiterated his suggestion that the National Drug Trade Conference, where the representatives of the manufacturers, and of the American Pharmaceutical Association, the National Wholesale Druggists Association and

the N. A. R. D., could get together and canvass this subject, and come to some agreement. He went on to tell of an instance in the State of New Jersey, where, under the old law of that State, a drug which did not conform in strength to the U. S. P. was adulterated, three druggists had been fined \$50 apiece for having a tincture of *nux vomica* that did not contain the U. S. P. amount of extractive matter, though it had sufficient of the active principle and was a superior article. It was about that time that a Pure Drug Bill was introduced into Congress, which incorporated the New Jersey provision. The question was, how to prevent the repetition of such injustice. The variation clause was the answer. It was true that, with the variation clause, had come many abuses; but the thing to do was to try to correct them, and at the same time preserve the rights of the manufacturer and the rights of the wholesaler, and also to establish the rights of thousands upon thousands of physicians who prescribed preparations not conforming to the U. S. P., and of the druggists who dispensed them, but with the difference stated on the label so that the physician or druggist could understand it. It was no argument to say that the public could not tell the difference, because the manufacturers were not putting up these articles to be sold to the public. They were putting them up to be placed on the shelves of the druggists, and every druggist knew what the U. S. P. prescribed. Mr. Woodruff closed by saying that he believed that when all the interests got together and thought the matter thoroughly over, all objections could be met by modifying these provisions.

Mr. Beringer said that he thought the principle of this resolution, to stop adulteration in every way possible in reason, was one that all were in accord with. Of course there were certain practical difficulties and dangers which were bound to come up from the adoption of such an amendment to the Pure Food and Drugs Act, which would permit no deviation whatever from the standards laid down in the U. S. Pharmacopoeia or National Formulary. As a member of the U. S. P. Revision Committee, he said it had come to his lot to do considerable experimenting, and to make critical examination of these formulas. If the Pharmacopoeia and National Formulary were infallible, there would be no need for corrections, and the standards laid down in the law could be accepted without hesitation. This was not always the case, however. Only recently he had had to point out an error in solution of iron iodide, which had to be corrected. If there were no deviation clause, no provision for variation in the Pure Food and Drugs Act, a National or State law, the druggists would often times be committing a crime. Moreover, it was not desirable to prevent improvements in formula. He instanced the formula for elixir of phosphate of iron, quinine and strychnine, U. S. P. There had been a change of manipulation, by which better and more permanent preparations had been produced—a decided improvement had been made.

Continuing, Mr. Beringer said that when the New Jersey Pure Food and Drugs Law was passed, the druggists very soon realized that they were in an extremely dangerous position. For instance, he said, they had prescriptions for such an article as emulsion of cod liver oil, 40 percent or probably $33\frac{1}{3}$ percent, that would not comply with the Pharmacopoeial standard, and the druggists would have been liable under the law for prosecution. The same was true as

to certain plasters; the manufacturers made for both home and export trade an article that was not the official belladonna plaster. After considerable agitation they had succeeded in getting written into the State law a clause providing for articles not complying with the standard, except as to preparations of opium, camphor and peppermint; where there should be no deviation from the official standard, because these were common articles sold in domestic trade and frequently adulterated. Mr. Beringer concluded with the statement that if, under present conditions such a clause as was contemplated by the resolution was embodied in the Food and Drugs Act, it would be exposing the druggists of the country to great danger. He expressed himself as favoring some modification of the proposed requirement which, while closing every avenue of adulteration, would at the same time protect the trade in their legitimate sphere of manufacturing and dealing. He thought that the suggestion of the gentleman who had just spoken, that this matter should be submitted to the Committee of this Association on Drug Conference was a wise one, and he moved that the resolution be referred to that Conference.

Mr. Mason seconded the motion made by Mr. Woodruff, and it was unanimously carried.

The Acting Secretary then read the following resolution, to which no objection was made, and it stood adopted:

Resolved, That the American Pharmaceutical Association recommend to the Committees of Revision of the United States Pharmacopœia and the National Formulary, the incorporation in the books of official standards such synonyms as will compel uniformity of product and eliminate the opportunity for unfair competition.

In this connection Mr. Beringer explained that the Committee on Pharmacopœia had already considered the subject of synonyms, and had taken action thereon. He had no doubt that the next revision would carry a great many synonyms that would be entirely appropriate and very nearly in conformity with this resolution.

The Acting Secretary then read the following resolution, heretofore referred to as coming from the Ohio State Pharmaceutical Association:

WHEREAS, The market is flooded with various mongrel preparations, masquerading under the fair name of Castile Soap, we recommend the reincorporation of the terms "Castile Soap" and "White Castile Soap" as synonyms for "Sapo" in the forthcoming edition of the Pharmacopœia.

Mr. Beal stated that this resolution referred to a subject which was doubtless quite important, and in order that the subject might have proper consideration, he moved that the resolution be returned to the Council, with the request that it be referred to the Committee on U. S. Pharmacopœia of this Association.

Doctor Payne seconded this motion.

Mr. Beringer said he thought the object aimed at in this resolution would be fully met if the reincorporation of the words "Castile Soap" and "White Castile Soap" as synonyms for "Sapo" should be recommended in the forthcoming Pharmacopœia. This would fix the legal standard of these terms, and meet the question raised here, without putting the Association in the peculiar situation of adopting the word "mongrel."

Mr. Beal said that he would withdraw his motion, in view of Mr. Beringer's suggestion.

Thereupon, Mr. Beringer moved that the resolution just read be adopted, and this motion was seconded by Mr. Payne and carried.

Acting Secretary Craig read the following resolution, from the Section on Historical Interests which he stated had not reached the Committee until tonight:

Resolved, That this Section be represented by a paper on Historical Pharmacy at the Eleventh International Congress of Pharmacy at The Hague in September next; that the history of the American Pharmaceutical Association by W. C. Alpers, be selected.

There was no objection to this resolution, and it stood adopted as read.

Mr. Mayo here stated that he was not clear as to the scope of duty of the House of Delegates, and desired to submit a question for information. He said he had a report of the Committee on International Pharmaceutical Nomenclature, and this report recommended that delegates to the International Pharmaceutical Congress be instructed to move for the appointment by the International Congress of a Committee on Unification of Pharmaceutical Nomenclature throughout the world. It was simply a matter of policy, and the recommendation was for the appointment of this Committee and its instruction. The report had not yet been submitted to the Association, as it had been crowded out for lack of time at the last general session; and he asked for a ruling from the Chairman as to whether or not this matter should be brought up before the House of Delegates.

The Chair said that his idea of the function of the House of Delegates was, that all resolutions should pass through the House, both those presented by delegates from different Associations and those presented from the different Sections; that, instead of being referred directly, as formerly, they were now referred to the House of Delegates, action taken on same by the House, and its recommendation passed on to the Council for general action by the Association.

Mr. Mayo said this ruling made it competent for him to introduce the desired resolution in his personal capacity, and he would therefore move

That the House of Delegates recommend that the delegates from the American Pharmaceutical Association to the Eleventh International Pharmaceutical Conference be instructed to move for the appointment of an International Committee on the Unification of Pharmaceutical Nomenclature, both as to pharmacopœial and non-pharmacopœial remedies and drugs.

This motion was seconded by Mr. Beringer and carried.

This concluded the series of resolutions to be considered by the House.

Mr. Beal said it seemed to him that the House of Delegates owed the Committee on Resolutions a very hearty vote of thanks for this most excellent series of recommendations. There were a few points, however, where he thought some slight additions or changes might be of benefit. For example in the resolution holding that the establishment of a "home" for the American Pharmaceutical Association was desirable. He thought there was danger that the word "home" might be misunderstood, as pointed out by President Day in his presidential address. It seemed to him, therefore, that this resolution would be improved by inserting after the word "home" the words: "or permanent official headquarters."

Mr. Beringer and Doctor Payne both thought the word "home" might be dropped to advantage, if the words "or permanent official headquarters" were

inserted, and the Chair stated that, without objection, this change would be made, since it was a mere change in wording, and did not change the sense of the resolution. It was so ordered.

Mr. Beal also moved to strike out from the resolution endorsing the Harrison Bill (H. R. 6282), providing for the registration of dealers in narcotic drugs, the language, "and that although we believe that the provisions of the measure would be improved by substituting in paragraph b. of section 2, the words, 'a regularly licensed physician, dentist or veterinary surgeon,' for the words, 'a physician, dentist or veterinary surgeon registered under this act.'"

The Chair stated that, by common consent, the action of the House on this resolution might be reconsidered; whereupon Mr. Beringer seconded Mr. Beal's motion to amend, and it was unanimously carried.

Mr. Mayo suggested a change in the resolution, "That the American Pharmaceutical Association go on record as in favor of the supplementing of Federal anti-narcotic legislation by the enactment of effective anti-narcotic laws uniform in all the states, in order that illicit traffic in habit-forming drugs may be better suppressed." He thought the word "illicit" was rather tautological in the connection used, and moved to strike it out and insert the words "for illegitimate purposes," after the words "habit-forming drugs," so that the latter clause would read "in order that the traffic in habit-forming drugs for illegitimate purposes may be better suppressed."

The Chair stated that, without objection, the resolution would be amended as suggested, and it was so ordered.

Thereupon, upon motion of Mr. Beal, duly seconded, the recommendations as a whole were adopted, and ordered to be transmitted to the Council, in accordance with the By-Laws.

The Chair called for miscellaneous business as the next order, but nothing was offered.

The Chair then stated that the election of officers for the ensuing year was the final order of business, and called for nominations for Chairman.

Prof. Clyde M. Snow, of Chicago, was nominated by Mr. Craig for Chairman, and the nomination seconded by Mr. Wallace. On motion, nominations for Chairman were closed, and the Secretary was directed to cast the affirmative ballot of the House of Delegates for Mr. Snow for Chairman for the ensuing year. The Secretary announced that he had cast the ballot as directed, and the Chair declared Mr. Snow duly elected.

Nominations for Vice-Chairman were called for, and W. S. Richardson, of Washington, was nominated by Mr. Snow, and the nomination was seconded by Mr. Day. The Chair stated that, without objection, nominations would be closed, and the Secretary instructed to cast the affirmative ballot of the House for Mr. Richardson for Vice-Chairman, and it was so ordered.

Nominations for Second Vice-Chairman were called for, and Linwood A. Brown, of Kentucky, was nominated by Mr. Claus. Nominations were closed, and the Secretary was directed to cast the affirmative ballot of the House for Mr. Brown.

Nominations for Secretary were called for, and R. A. Kuever, of Iowa, was

nominated by Mr. Wallace. Nominations were closed and the Secretary directed to cast the affirmative ballot of the House for Mr. Kuever.

At this point, on motion of Mr. Craig, seconded by Mr. Mason, an adjournment was taken for five minutes.

Upon resumption, Mr. Craig brought up the amendment to the By-Laws previously presented and moved it be adopted, and this motion was seconded by Mr. Richardson and carried.

Acting Chairman Anderson announced that this concluded the business of the House of Delegates, and he would call on Dr. Otto Claus, of St. Louis, to escort the newly-elected officers to the rostrum, for installation. Dr. Claus duly performed this very pleasant duty, and introduced, successively, Mr. Snow, as Chairman, Mr. Richardson, as Vice Chairman, Mr. Brown, as Second Vice-Chairman and Mr. Kuever, as Secretary.

Mr. Snow took the chair, and stated that a motion to adjourn was now in order, and he would entertain a motion to that effect.

Mr. Mayo stated that, before this motion was put, he wished to move a vote of thanks to the retiring and very efficient officers of the House of Delegates serving during the past year, including the very efficient Secretary—not forgetting the Assistant Secretary. This motion was seconded by Mr. Beal, and carried by a unanimous rising vote.

Upon motion duly seconded, the House of Delegates then stood adjourned *sine die*.

THE NECESSITY OF SOUND PREPARATION.

Any one who hopes to achieve success, even the average, must know more, or at least as much, about some one thing as any other one, and not only know, but know how to do—and how to utilize his experience and knowledge for the benefit of others. Broad success depends on singleness of purpose, clear perception of what is to be desired and to be accomplished, and capacity to recognize true values of men and things and properly place them. Thorough preparation in elementary knowledge, wherever and however it may be acquired, development and training of the powers of concentration and application, is the best, in fact the only, foundation upon which to build this special or technical training. After this the willingness to persevere in the effort to accomplish something for the purpose of accomplishment, the ambition to do whatever is to be done and whatever is undertaken, and do it right—making personal ambition secondary to everything else—will bring about great success, provided the God-given, or inherent, capacity to do great things exists; but in any case success up to the full measure of capacity.

Without this preparation and training, failure is absolutely certain. —*T. A. T'ail.*

Section on Scientific Papers

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SCIENTIFIC SECTION.*

FIRST SESSION—TUESDAY AFTERNOON, AUGUST 19, 1913.

The first session of the Section on Scientific Papers was called to order by Chairman F. R. Eldred, of Indianapolis, at 3:45 p. m., in Room "A" of the Masonic Grand Lodge, with F. P. Stroup, of Philadelphia, Secretary, and W. L. Scoville, of Detroit, Second Vice-Chairman, present.

Mr. Scoville was asked to preside while the Chairman's Address was being read. (See September JOURNAL, p. 1109.)

The Address of the Chairman was discussed by Messrs. Lowe, Raubenheimer, Stewart, Scoville, Gordon and Vanderkleed, and, on motion of Mr. Mayo, duly seconded, referred for publication.

Mr. Eldred resumed the Chair, and stated that the next order of business was the appointment of a Nominating Committee, to nominate officers for the ensuing year. The officers to be named were a Chairman, First Vice-Chairman, Second Vice-Chairman and Secretary, and it was the duty of the Nominating Committee to bring in at this session two names for each of these offices, these nominations to be balloted upon at the last session of the Scientific Section. He thereupon appointed the following as a Nominating Committee: Messrs. Linwood A. Brown, of Lexington, Ky.; Otto Raubenheimer, of Brooklyn, and E. L. Maines, of Brooklyn.

The Chair said the Section was now ready to proceed with the reading of papers, and he would suggest that, as there was a considerable number of papers to be disposed of in a rather limited time, the formality of moving that papers be received and referred be dispensed with, and that it be understood that, without objection, the papers read would take the usual course. He thereupon called on Charles E. Caspari, of St. Louis, to read a paper on "The Determination of Santonin in Santonica."

Prof. Caspari explained before reading his paper that he had found out, since coming to Nashville, that a paper on the same order had recently been published in the *Druggists' Circular*; but as he had not seen that paper, and did not claim originality for this paper, he thought he was authorized to read it.

Prof. Caspari's paper was discussed by Messrs. Lowe, Raubenheimer, Asher, Engelhardt, the author and by Chairman Eldred, and referred for publication.

The next paper read was one by Hermann Engelhardt, on "The Estimation of Phosphorous in Tablets, Pills, etc."

*The discussions referred to in the minutes will appear in connection with the various papers as they are printed.

Before reading his paper Mr. Engelhardt explained that it was in the nature of a preliminary report on the subject.

The paper was briefly discussed by Messrs. Vanderkleed, Engelhardt and Chairman Eldred, and referred for publication.

The Chair stated that the next three papers on the program (Nos. 4, 5 and 6) were contributed by Chas. H. Lawall, of Philadelphia, who was not present, and they would be passed for the present; but after all the papers whose authors were present at the Section session had been read, these omitted papers would then be taken up.

The next paper on the program, one by E. A. Ruddiman, of Nashville, on "The Examination of Proprietary Medicines," was likewise passed for the time being, because of the absence of the author.

A paper on "Some New Methods for the Analysis of Certain Drug Preparations" was read by the author, Linwood A. Brown, of Lexington, Ky.

The paper just read was discussed by Messrs. Asher, Brown and Gordon, and referred for publication.

The next three papers on the program were passed, because of the absence of the writers, and a paper on "Some Notes on the LaWall Assay Process" was read by H. W. Jones.

The Chair invited discussion upon the paper just read, but none was offered.

At this point, the Chairman made a series of announcements as to Section meetings and social features.

The reading of papers was resumed, and H. A. B. Dunning, of Baltimore, read a paper on "Detection and Estimation of Minute Quantities of Methyl Alcohol in the Presence of Ethyl Alcohol, and Formaldehyde in the Presence of Hexamethylenamine."

This paper was briefly discussed by Otto Raubenheimer and the writer, and referred for publication.

A score or more of papers was passed for the time being, on account of the absence of the authors, while one or two of those present asked to have the reading of their papers postponed, for the reason that they had not expected them to be reached at this session.

A paper by E. G. Eberhardt and Frank R. Eldred on "Bibliography of the Deterioration of Drugs and Pharmaceutical Products" was read by title.

The Chair then called upon Wilbur L. Scoville, of Detroit, to present his paper on "Tincture of Cantharides." Before reading his paper, Mr. Scoville explained that it was in the nature of a "continued story;" that this was the third installment, and the conclusion was somewhere in the future, he did not know how far.

This paper was discussed by Messrs. Raubenheimer, Gordon, Scoville and Kebler, and referred for publication.

The Chair stated that it was now 5 o'clock in the evening, and he believed that, with the progress the Section had made, it would be able to finish its program at the next session, and as so many of the members had gone, he thought it would perhaps be best to have the report of the Nominating Committee at this time.

Thereupon, Chairman Brown made the following report for the Nominating Committee:

REPORT OF THE NOMINATING COMMITTEE.

Chairman, Freeman P. Stroup, E. A. Ruddiman.

First Vice Chairman, Hermann Engelhardt, Azor Thurston.

Second Vice Chairman, Charles E. Caspari, J. F. Woolsey.

Secretary, Wilbur L. Scoville, H. A. B. Dunning.

Signed: L. A. BROWN, OTTO RAUBENHEIMER, E. L. MAINES, Committee.

The Chair stated that this report would be acted upon at the last session.

In answer to an inquiry by Mr. Kebler, as to whether a report from the Committee on Drug Market had been received by this Section, the Chair replied that it had not. Mr. Kebler stated that he had a copy of this report, but he had not been advised by the Chairman of the Committee to turn it over to the Section.

Mr. Army stated that the report of the Committee on Drug Market, as well as that of the Committee on Weights and Measures, had been referred from the general session to this Section, and he thought if Mr. Kebler had copies of either or both it would be proper for him to file them with the Section. Mr. Kebler responded that while Chairman Patch, of the Committee on Drug Market, had sent him a copy of his report, he did not say it was in finished condition, and he understood that the gentleman was having the report printed, and expected to have copies for distribution here. If these copies did not arrive by tomorrow, he said, he would be willing to submit the report in the shape he had it, but would prefer that the report in its authorized, finished form should be presented.

With this explanation, the Chair stated that consideration of the report of the Committee on Drug Market would be postponed until tomorrow.

Thereupon, upon motion made and seconded, the Section stood adjourned.

SECOND SESSION, WEDNESDAY, AUGUST 20, 1913, 8:30 P. M.

The second session of the Scientific Section was opened by Chairman Eldred, Vice Chairman Scoville acting as Secretary.

Papers were presented as follows:

"Bethabara," by Otto Raubenheimer, which was read in full by the author. Mr. Vanderkleed asked whether the extract had any special advantage, as an indicator, and Mr. Raubenheimer replied that it was extremely sensitive to ammonia.

"Are Tablets of Uniform Composition," by L. F. Kebler. Read in abstract by the author.

Secretary Stroup relieved Mr. Scoville as acting Secretary.

"How Much Should Compressed Tablets Vary in Weight?" by C. H. Briggs. Read in full by W. L. Scoville.

Mr. Vanderkleed asked whether Kebler's 449 samples meant so many packages, or just individual tablets? Kebler replied "449 kinds—10 to 50 tablets being used at a time."

C. E. Caspari asked whether Kebler's investigations went into the deterioration of nitroglycerin tablets? Kebler replied that there seemed to be some loss

in process of manufacture, but little thereafter. Prof. Caspari reported that in a series of investigations carried over some months, he had noted a gradual loss of strength. Messrs. Engelhardt and Caspari both referred to change in color which nitroglycerin tablets undergo on keeping.

Others taking part in the discussion were Messrs. Raubenheimer, Brown, Abbott, Clark, Caspari, Murray, Vanderkleed, Eldred and Fantus.

"The Effect of Geographical Source on the Volatile Oil in Hops," by Frank Rabak. Read in abstract by W. W. Stockberger.

"*Cunila mariana*, a substitute for *Spigelia*," by W. W. Stockberger. Read in abstract by the author.

"The Field for Drug Plant Breeding," by W. W. Stockberger. Read in abstract by the author.

John Uri Lloyd gave his experience and observations with regard to tobacco and a number of other plants with reference to the influence locality has on quality.

The Secretary called attention to the difficulties met in complying with the requirements of Section VI of the by-laws, and suggested that the Section be revised to read as follows:

Section VI.

MEETINGS.

Article I. At least three sessions of the Section shall be held at each annual meeting of the Association. Additional sessions may be held at any time during the meeting when the officers of the Section may see fit, and by consent of the Council; provided, however, that these sessions be so arranged that they conflict as little as possible with the sessions of other Sections, and that no session be held simultaneously with the final session of the Association.

Upon motion, the suggestion was accepted and the matter laid on the table to be acted upon at the next meeting of the Section.

The Section then adjourned until 3 p. m. Thursday.

F. P. STROUP, Secretary.

THIRD SESSION—THURSDAY AFTERNOON, AUGUST 21, 1913.

The Section was called to order by Chairman Eldred at 3:30 p. m. in Room "A" of the Grand Lodge.

The minutes of the first session, held Tuesday afternoon, and the second session, held Wednesday evening, were read by Secretary Stroup, and the Chair stated that if there were no corrections to the minutes, they would stand approved as read, and it was so ordered.

The Chair announced that the election of officers for the ensuing year was now in order, and appointed Mr. Richtmann, of Florida, and Mr. Murray, of New Jersey, as tellers to take the vote by ballot.

Mr. Stroup asked the privilege of withdrawing his name from nomination for Chairman in favor of Doctor Ruddiman, as his plans for the ensuing year were such that, even if elected, he could not do the position justice. He said he fully appreciated the compliment of having his name in nomination, but felt constrained to withdraw it. This request was refused, on motion of Mr. Wilbert, seconded by Mr. Vanderkleed, and Mr. Stroup said that he could only make the request that another member had made on a former similar occasion, that the members refuse to vote for him when the ballot was taken.

The tellers appointed proceeded to take the ballot upon the nominations as made, and reported that the following had received a majority of the votes east for the respective offices named, and the Chair declared these gentlemen duly elected:

Chairman, Edsel A. Ruddiman, of Nashville.

First Vice-Chairman, Hermann Engelhardt, of Baltimore.

Second Vice-Chairman, Charles E. Caspari, of St. Louis.

Secretary, Wilbur L. Scoville, of Detroit.

W. L. Scoville moved to amend Article II, Section IX, of the by-laws, referring to titles and abstracts of papers, by adding thereto, "and all papers must be in the possession of the Chairman at least one week before the meeting of the Section."

Mr. Vanderkleed stated that, while he favored Mr. Scoville's motion, he would like to ask if it were possible to present a proposed change in the by-laws and act upon it at the same session. Mr. Scoville responded that it was not. Mr. Vanderkleed then seconded the motion as made.

Thereupon Mr. Wilbert moved to suspend the by-laws, in order that this motion might be put to a vote.

Chairman Eldred spoke in opposition to the motion just made, and thought it would be a step backward, instead of forward. As far as he knew, there had been no complaint of embarrassment caused by the by-laws as they stood. Such a good showing in the way of papers had been made this year that he thought the Section could afford to require hereafter that the papers be in the hands of the Chairman thirty days before the meeting, and this would be quite an advantage, since it would enable the officers of the Section to really see what papers should be accepted and read, and would give them time to make an intelligent arrangement of the program. As the matter was now, the Chairman had no way of doing this except by reference to title, and experience had shown that titles were not always a good index to the character of the papers themselves. He did not think the Section officers should be embarrassed by having this additional restriction.

There were calls of "Question!", and the Chair ruled that the proposed amendment would have to go over to next year's meeting for action.

The Chair then stated that there was another amendment presented to the by-laws at last night's session, which could be voted upon at this session. The Secretary thereupon read Articles I and II of Section VI of the by-laws, and then read the proposed amendment to Article I, providing for at least three sessions of the Scientific Section at each annual meeting as presented at the preceding session.

Mr. Vanderkleed, seconded by Mr. Scoville, moved the adoption of the proposed amendment, and that same be referred to the Council for approval, and this motion prevailed.

The Chair stated that the Section was now ready to proceed with the reading of papers, and explained that it would be necessary to deviate somewhat from the regular order, in order to accomodate members who had to appear before other Sections. He called upon Prof. C. E. Vanderkleed, of Philadelphia,

to present a series of papers contributed by himself and his associates, and invited the gentleman to present them in any order he saw fit.

Prof. Vanderkleed then presented the following papers, in the order given.

"An Improved Form of Kymograph," by Paul S. Pittenger.

"Variation in Susceptibility of the Guinea Pig, Continuation of a Previous Study," by Chas. E. Vanderkleed and Paul S. Pittenger.

"A Pharmacodynamic Study of the Pituitary Gland, with Tests of a New Product," by Fritz Heidlberg, Paul S. Pittenger and Chas. E. Vanderkleed.

"A New Uterus-Contracting Method of Testing Ergot, with Comparison with the Blood Pressure Method," by Paul S. Pittenger and Chas. E. Vanderkleed.

"Metal Colloids, Their Increasing Importance as Remedial Agents," by Chas. E. Vanderkleed and Paul S. Pittenger.

After Prof. Vanderkleed had answered at some length an inquiry by Mr. Gordon as to his method of preparing and clearing the colloids treated in his paper upon that subject, the series of papers was received, and ordered to take the usual course.

The Chair explained that a paper by William Mansfield, of New York, upon the subject "Plant Hairs of the U. S. P. and N. F. Drugs" had been withdrawn by the author, because he had not been able to complete it, and that it would be read later before one of the Branches.

Prof. Mansfield was thereupon called on to read his paper upon "Papain of Commerce," which he proceeded to do.

This paper on papain was discussed at length by Messrs. Gordon, Mansfield, Lloyd, Murray, Puckner, Engelhardt, Wilbert and Chairman Eldred, and Mr. Murray asked the author quite a number of questions about the subject-matter of his paper, to which Mr. Mansfield responded. The paper was then received and referred to take the usual course.

Doctor H. H. Rusby, of New York, offered the following resolution:

Resolved, That the American Pharmaceutical Association request the United States Department of Agriculture and the United States National Museum to cooperate in securing and caring for a collection of authenticated useful plants for the purpose of providing accurate and positive decisions of the many questions that are constantly arising concerning the identity and quality of such products.

Speaking to his resolution, Dr. Rusby said that, at present, asafoetida was a bone of contention between the importers and the United States Government. Nobody knew what asafoetida really was, and there was no end of trouble about it. The same was true of other drugs. If such a collection as that proposed could be established in a national museum then any one could consult these specimens and know just what they contained. He thought every drug should be represented by an authenticated specimen at Washington. He quoted from Dr. J. U. Lloyd in support of this view, and asked the passage of the resolution.

Dr. Lloyd approved the resolution just read, and expressed the opinion that the pharmacists of the country should endeavor to have collected at Washington authenticated specimens of drugs, roots and plants. One use of such a collection would be that the writers of papers could then speak with authority on many things they could not at present, and possibly be able to accompany their papers with a sample of the authenticated article. Resort to such a collection would be a final and conclusive means of settling any question that might arise upon

reports made of the examination of plants, as to their properties and qualities. He believed Dr. Rusby's resolution was a wise one, and that the United States Government was the proper authority to take this matter in hand.

The Chair said this resolution would go to the Committee on Resolutions of the House of Delegates, for further action.

The next paper read was one by John Uri Lloyd, of Cincinnati, on "Coca; It's History and Uses by the Indians of the Colombian Andes."

The Chair said he was sure this very interesting paper of Doctor Lloyd's would be published in the Journal, so that all could read it. The paper was then received and referred for publication.

The next paper read was one by M. I. Wilbert, of Washington, D. C., on "The Proposed List of Useful Remedies."

After a brief discussion of the paper by Prof. Mansfield and the author, it was ordered to take the usual course.

The Chair stated that this was the last of the papers whose authors were present, but there were two very interesting papers on the program whose authors were not present, one by Charles H. Lawall, on "A New Form of Separatory Funnel for Preventing the Formation of Emulsions in Shaking Out with Immiscible Solvents," and he would ask the Secretary to read this paper. This Secretary Stroup proceeded to do, and in connection therewith illustrated the working of the apparatus accompanying same.

Chairman Eldred described the successful working of this apparatus sent him by Mr. LaWall in his own laboratory, after which the paper was ordered to take the usual course.

The Chair stated that the second paper to which he had referred, whose author was not present, was a paper by H. M. Gordin, and his associate, Jay Kaplan, "Note on the Comparative Adsorption of Different Substances by Lloyd's Reagent, Animal Charcoal and Aluminum Hydroxide. Complete Adsorption of Alkaloids." He said he would ask Doctor Lloyd to present this paper, which he proceeded to do.

Mr. Gordon moved a vote of thanks to Doctor Lloyd for his kindness in presenting this paper and giving the valuable information he had in such an understandable way, and this motion was seconded by Mr. Murray. Doctor Lloyd suggested waiting a year, and stated that two years ago he would have felt safer to talk on this subject than now. This suggestion did not meet with the favor of the members, however, and the vote of thanks was heartily accorded.

Chairman Eldred then read a paper by George D. Beal, on "The Preparation of Pure Dextrose and Sucrose Caramels."

The Chair stated that the rest of the papers on the program, the authors not being present, would be read by title and referred for publication. The following is a list of the papers so read by title and referred:

"Methods of Estimating Oil of Peppermint in Spirit of Peppermint," by Charles H. LaWall and Leroy Forman; "Methods of Examination of Extract of Vanilla," by Charles H. LaWall and Leroy Forman; "The Examination of Proprietary Medicines," by E. A. Ruddiman; "The Phosphoric Anhydride Content of Syrup of Hypophosphites," by W. D. McAbee; "Observations Upon the Assay of Pepsin," by H. T. Graber; "Linseed Oil," by Azor Thurston; "Notes

on the Analysis of Essential Oils," by Francis D. Dodge; "An Examination of the Volatile Oil of *Monarda Citriodora*," by Edward Kremers and Nellie Wakeman; "The Crystalline Glucoside from *Gaultheria Procumbens*," by Edward Kremers and C. W. Talbot; "Oregon Balsam," by L. E. Sayre; "Gelseminine—Further Report of Progress in the Purification of this Alkaloid," by L. E. Sayre; "Individual Variation in Belladonna Plants as a Basis for Improvement by Selection," by A. F. Sievers; "The Influence of Soil Composition on Medicinal Plants," by F. A. Miller; "The Comparative Activity of Various Species and Varieties of *Digitalis*," by F. A. Miller and W. F. Baker; "The Commercial Possibilities in Growing Medicinal Plants," by F. A. Miller; "Reactions of Plant Substances with Certain Reagents," by Henry Kraemer; "The Relation of Pharmacognosy to the Practice of Pharmacy," by Heber W. Youngken; "The Pharmacognosy Museum," by E. N. Gathercoal; "Deterioration of *Digitalis* Tinctures and Fluidextracts," by C. C. Haskell; "The Relative Activity of Various Galenical Preparations of Ergot," by C. C. Haskell; "The Rate of Deterioration of Ouabain Solutions," by C. C. Haskell and W. A. Doeppers; "The Influence of Curing and Storage Upon the Activity of *Digitalis* Leaf," by C. C. Haskell and F. A. Miller; "Autogenous Vaccines," by Jacob Diner; "Biological Products; Their Use and Abuse," by Severance Burrage; "Acidity of Hydrogen Dioxide Solution," by B. L. Murray; "Hypophosphorous Acid," by E. E. Wyckoff; "The Making of Tablets by the Retail Pharmacist," by Bernard Fantus; "Consideration of some Newer Remedies," by C. S. Woods; "Suggestions Regarding the Work of the Scientific Section of the A. Ph. A.," by F. E. Stewart; "Some Chinese and Japanese Pills, Tablets and Powders Imported Into the United States," by Albert Schneider.

The Chair stated that the report of the Committee on Drug Market was properly a matter for consideration now, but suggested that as there were copies ready for distribution among the members, and the report was quite long and of a character well known to the members, it was unnecessary to read it. He thought it might be read by title and referred for publication. Mr. Woolsey, duly seconded, so moved, and the motion prevailed.

Mr. Murray called attention to the fact that this report of the Committee on Drug Market bore date August, 1913, whereas it showed in a note at the close of the report that it contained information taken from the Government reports covering the years 1908, 1909, 1911 and 1912.

Chairman Eldred stated that the status of this Committee was discussed extensively at the Denver meeting last year, and it was expected that some action would be taken on it at this meeting, either by way of changing the name of the Committee, or doing away with it altogether. He thought perhaps the thing most favored was to change the name of the Committee, as the character of the report was not a report on Drug Market at all, but a report on adulteration.

Prof. William Mansfield, of New York, said he thought the publication of a report of this kind would have rather a bad effect on the physicians of the country, and on laymen in general, because it simply gave the number of samples taken which were found to be adulterated. For the report to be of real value, he thought the whole number of samples examined should be stated, as well as the number found adulterated. In this way, some idea of the relative adul-

teration of drugs could be had, and it could be seen how pure drugs were, or how impure. He thought the report in this form was rather misleading, and was not a report on Drug Market at all, but simply a report on isolated cases of adulteration.

Fredrick T. Gordon, of Philadelphia, thereupon moved that this report be received and referred to the Council for consideration, with the recommendation that the title of the Committee on Drug Market be changed to Committee on Drug Adulteration, and that this Committee be instructed in future reports to give not only the number of adulterated samples, but also the total number of samples examined.

This motion had a second in Prof. Mansfield, and was put to a vote and carried.

The Chair stated that there was another Committee Report which had been referred to this Section by the General Session, namely; the Report of the Committee on Weights and Measures. He asked what should be done with this report.

Mr. Wilbert said he supposed it was the usual report of progress, and the Chair said he thought it was. Thereupon, Mr. Wilbert, seconded by Mr. Mansfield, moved that the report be received and referred for publication, and it was so ordered.

Prof. Mansfield said that before the present Chairman yielded his office to his successor, he wished to move a vote of thanks to Mr. Eldred for the very efficient manner in which he had conducted the several sessions of the Scientific Section, and for the many excellent papers he had secured to be presented before it.

This motion was seconded by Mr. Murray and Mr. Engelhardt, and a vote upon it being put by Secretary Stroup, it was carried unanimously.

The ceremony of installation of the officers-elect was dispensed with, as the hour was late, and Chairman Eldred announced that a motion to adjourn was in order.

Thereupon, Mr. Engelhardt, seconded by Mr. Woolsey, so moved, and the Section stood adjourned until the Annual Meeting of 1914.

THE SILENCE OF MORAL PROGRESS.

The fact of moral progress is sometimes doubted, for several reasons. The workings of moral evil are as a rule violent and noisy; the operations of the beneficent forces are silent and slow. The whirlwind that uproots the tree startles the senses and kindles the imagination of the ignorant onlooker, while the quiet, patient, beautiful interworking of the natural forces that built the tree, he neither admires nor notices. Most people have some knowledge of the evils of their own time but few of them have any knowledge of the evils of past times. It is inevitable that they should reckon the wrongs of which they know as more important than those of which they do not know.—*Washington Gladden.*

Section on Pharmacopoeias and Formularies

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SECTION ON PHARMACOPOEIAS AND FORMULARIES.*

FIRST SESSION—TUESDAY EVENING, AUGUST 19, 1913.

The first session of the Section on Pharmacopoeias and Formularies was called to order by Chairman L. D. Havenhill, of Kansas, at 8:30 o'clock p. m. in room "A" of the Grand Lodge.

E. Fullerton Cook, of Philadelphia, Secretary, and R. H. Needham, of Texas, Associate on the Committee, were also present.

Associate Needham was asked to take the Chair while Chairman Havenhill presented his address. (See September JOURNAL, p. 1123.)

The Acting Chairman called attention to the fact that the Address just read contained some recommendations, and said it would be proper to appoint a Committee to consider these, and, without going through the formality of a motion, he would appoint as such Committee the following: Messrs. Lyman F. Kebler, of Washington City; Frank N. Moerck, of Philadelphia, and Adolph Zieffle, of North Dakota. He asked that the Committee make its report before this session adjourned.

Mr. Havenhill resumed the Chair, and stated that the report of the Chairman of the United States Pharmacopoeial Revision Committee would now be made by Prof. Joseph Remington, of Philadelphia.

Prof. Remington said he was sure that what he had to tell this evening would be interesting to a great many who had waited years to hear it. This report consisted of nearly fifty closely typewritten pages, and he would not attempt to read it all, but only those parts he considered specially pertinent. He said he felt sure that Prof. Kebler, Prof. Vanderkleed and Dr. Lloyd, and the other chemists present who were interested in the subject, would not care to hear the whole report read in detail, and he would spare these gentlemen that trial. The changes here noted had already received a majority of the votes of the members of the Committee of Revision, he said, and they were "out of the woods," so far as these changes were concerned, otherwise, he would not have dared to come here and make a talk presenting the substance of this report. He explained that the work was not complete, but what had been done constituted the greater part of the revision of the text of the book, and of the tests of the chemical substances in the Pharmacopoeia. There yet remained the reports of the Committee on Botany and Pharmacognosy, and one or two others. He was sure what he had to say here would interest the manufacturers of the country,

*The papers and discussions referred to in the minutes will be printed in subsequent issues of the JOURNAL.

the chemists and others, and it was the purpose to print this with the understanding that it was a tentative report only.

Prof. Remington then went on to give an extended verbal abstract of his report, with copious explanatory remarks.

The Chairman said he was sure that the members had listened with a great deal of interest to this able report from Prof. Remington.

The report was discussed by Messrs. Clark, Gordon, Cook, Mansfield, Havenhill and Remington; and, on motion of Otto Raubenheimer, seconded by Dr. Fantus, was ordered received and referred for publication.

Associate Needham was asked to take the Chair while Prof. Havenhill read his report as Chairman of the A. Ph. A. Committee on U. S. Pharmacopoeia. Before reading his paper, Prof. Havenhill called attention to the fact that the Committee was composed of ten members, one of whom retired each year, and that the object of the Committee was to assist the Committee on Revision of the U. S. P. as far as they could in correcting errors in the official formulas, and in obtaining a list of the different remedies used in different parts of the country. The Committee was to make its report to the Association, and it would eventually find its way into the hands of the Revision Committee.

Referring to the test for the presence of cane sugar in milk sugar, described in the report, Dr. H. P. Hynson said he desired to make amends for an oversight to accord proper credit for a test he had made ten years ago or more. A physician, who was also a pharmaceutical chemist, came into his store about that time, and he asked him what would be the best test for cane sugar in sugar of milk, and he replied: "I think if you will try the resorcin test for hydrochloric acid, reversing it, you will get a good test." So he and Mr. Dunning tried it, and found it was a good test. This was in 1902, as he remembered, before Mr. Dunning became a member of the Association. Mr. Hynson said he had written a paper for the Association, which included this test among other notes, and this paper was published in the Proceedings for that year, as he remembered. The funny part of it was, he said, that this doctor came to the store afterwards and said: "You and Dunning are great fellows! You have made this test and taken all the credit to yourselves, and never said a word about Richardson." Doctor Richardson deserved the credit for this test, which he had failed to give him at the time, and he wanted to give him full credit now.

Prof. Remington said that the mention of resorcin reminded him that one of his friends was making up a barrel of hair preparation on one occasion, and it was not perfectly clear, and the suggestion was made to him to add resorcin, with the result that it turned purple, and people's hair all around the neighborhood came pretty near being purple as the result of this experiment.

Dr. Alpers asked Dr. Hynson if he meant to say that Dr. Richardson was the first one who had proposed that test, and went on to state that he had used this test for twenty years, but he deserved no credit for it, as he had gotten it from somebody else.

On motion of Prof. Remington, seconded by Mr. Raubenheimer, the report was read and referred to take the usual course.

Mr. Havenhill resumed the Chair, and stated that credit in this matter had been attributed to Dr. Dunning, and said he thought it was only proper that

Dr. Hynson's name and that of Dr. Richardson's should be mentioned in connection with it, too, so that all would have proper recognition.

The report of the Chairman of the N. F. Revision Committee was next called for, but Chairman Diehl stated that he was not aware that this report was expected to be made at this session. The Chair stated that this report would be passed for the time being.

The report of the Chairman of the Committee on Unofficial Standards was next called for, and in the absence of Chairman Beringer, of the Committee, the report was read by Secretary Cook.

On motion of Dr. Asher, seconded by Mr. Raubenheimer, the report was ordered received to take the usual course.

The Chair next called on Otto Raubenheimer for his report as Chairman of the Recipe Committee, which the author proceeded to present.

On motion of Prof. Schneider, duly seconded, the report was received and referred to take the usual course.

Report of the Committee on Chairman's Address was called for, and was presented by Dr. Kebler, as follows:

REPORT OF THE COMMITTEE ON CHAIRMAN'S ADDRESS.

The Committee, after carefully reading the address of the Chairman of the Section on Pharmacopœias and Formularies and considering the recommendations contained therein, beg to report as follows:

Recommendation I, providing for eight associates, three active and five honorary, in addition to the chairman and secretary of the section, is concurred in, but the Committee desire to call attention to the fact that there are very few practicing physicians who are members of the Association and eligible for an election.

Recommendation II, providing for a compilation of Pharmacopœias and Formularies of the world as rapidly and completely as possible is concurred in.

L. F. KEBLER,
FRANK X. MOERK.
ADOLPH ZIEFLE.

On motion of Mr. Needham, the report was received, and on motion of Dr. Alpers, duly seconded, both recommendations of the report were adopted.

At this point, Dr. Good called attention to the fact that the report of the Committee on Chairman's Address used this language: "It desires to call attention to the fact that there are very few physicians who are members of the Association and eligible for an election."

Dr. Alpers responded that when he made his motion he referred to that part of the report of the Committee making the recommendations, whereas the language here quoted was only a statement of fact by the Committee.

Dr. Good replied to this that he thought the language of the report made it obligatory to appoint a physician, whether one was available or not, and this language should be made broader than it was.

Mr. Needham explained that there was a misconception on the part of some as to what the Chairman intended on this point. Unfortunately, he said, he and the Chairman had tried to start something in different directions. It was very hard for practicing pharmacists to get physicians interested in a matter

like this, or to get a food and drug man interested. As an illustration, he had a man who promised him a paper right up to the date of leaving for this meeting, and he had sent for it just before his train started, and couldn't get it. He said he believed the Chairman had in mind the idea that if it was possible to get the interest of men in these callings, it would mean they could be gotten to do something. He believed the recommendation was a good one.

Dr. Good said there was no objection to this, but he wanted to make the matter practical. He thought it was proper to use every effort to get physicians interested, and get representation from the physicians on this committee; but he was opposed to the limitation to a physician, as, if it was impossible to get a physician, then somebody else should be selected. He moved that the wording be changed by inserting the words, "it is desirable there should be a physician."

Chairman Havenhill said he would be glad to accept this modification. He said it seemed unfortunate, however, that in an Association like this only one practicing physician could be found.

Thereupon Dr. Alpers moved to adopt the recommendation in this form and the motion prevailed.

The Chair stated that the appointment of a Nominating Committee was now in order, and called attention to the fact that a Chairman, Secretary and three Associates, composed the officers of the Section, and nominations would be reported accordingly. He named as a Nominating Committee Messrs. J. Leon Lascoff, of New York, A. H. Clark, of Chicago, and W. A. Puckner, of Chicago.

The Chair stated that the next meeting of this Section would be held at 8 o'clock on Friday evening, in the Assembly Hall of the Hotel Hermitage. Two interesting illustrated lectures were scheduled for that occasion, he said, one by Dr. Hitchens, on "Sterilization by the Retail Pharmacist," and a talk on "Foreign Formularies as compared with the N. F.," by Mr. Raubenheimer.

The Chair thereupon called upon Dr. Barnard Fantus to present his paper on "Tabellae Dulces, Sweet Tablets for Childrens' Medication. A plea that they be made official." Dr. Fantus proceeded to present his paper, exhibiting numerous specimens of the tablets described therein.

This paper was discussed at great length by Messrs. Alpers, White, Lascoff, Stewart, Raubenheimer, Diehl, Nitardy, Chairman Havenhill and the writer; and, on motion of Mr. Gordon, seconded by Mr. Snow, the paper was ordered received and referred to the Publication Committee, with request that a copy of same be sent to the National Formulary Revision Committee, with the recommendation to consider the advisability of introducing this class of preparations into the forthcoming revision of the National Formulary.

Thereupon, upon motion of Mr. Good, the Section stood adjourned.

SECOND SESSION—FRIDAY EVENING, AUGUST 22, 1913.

Chairman Havenhill called the Section to order at 8:15 p. m. in the Assembly Hall of the Hotel Hermitage, on the ninth floor.

On motion, the reading of the minutes of the first session was dispensed with.

The Chair announced that the presentation of papers would now be taken

up, and called on M. I. Wilbert, of Washington City, to present his paper on "Pharmacopoeial Titles for New Remedies."

Mr. Wilbert presented his paper in extended verbal abstract.

The paper just read was discussed by Messrs. Good, Raubenheimer, Alpers and the author, and was received and referred to take the usual course.

The Chair stated that the hour of 8:45 p. m. had now arrived, the time scheduled for the lecture of Dr. A. P. Hitchens, on the subject of "Sterilization by the Retail Pharmacist."

Before reading his paper, Dr. Hitchens said he wished to thank the members in the honor conferred upon him in the request to read this paper before this Section; that he appreciated the compliment very sincerely. He then proceeded with his subject, and during the reading of his paper stopped from time to time to explain his text by exhibiting the practical workings of a number of test-tubes, pipettes, flasks, burettes, etc.

Dr. Hitchens won the applause of his auditors by his presentation of his subject, and after discussion of the paper by Messrs. Wilbert, Becker, Cook, Nirtardy, Raubenheimer, Havenhill and the author, the paper was received, with a vote of thanks, on motion of Mr. Needham, seconded by Mr. Lascoff, and referred to take the usual course.

The next paper read was one by Otto Raubenheimer, entitled "Foreign Formularies as Compared with the N. F."

This paper was discussed by Messrs. Hynson, Caspari, Jr., Gordon, Alpers, Diehl, Wilbert and the author; and, on motion of Mr. Needham, seconded by Mr. Lascoff and Dr. Alpers, Mr. Raubenheimer was extended a rising vote of thanks for his very interesting treatment of his subject, and his exhibit of the Formularies of the world, and the paper was received and referred for publication.

The Chairman said he thought this was an appropriate place to have presented the Report of the Chairman of the Committee of Revision "of our own National Formulary—I might say *THE* Formulary," held over from the last meeting. The report was read by Chairman Diehl. (See September JOURNAL, p. 1063).

In connection with the reading of his report, Prof. Diehl said he had also a mimeograph copy of the formulas so far approved by the Committee, and the cautionary restriction was given: "This is confidentially circulated to the general officers, with the approval of the Chairman." He said he would pass this around, and it would be understood that it was confidential. This precaution was necessary, he said, in order to guard against accidents as to copyright, and it would not be published until that had been done. The report just read would be published, of course.

Dr. Good asked Prof. Diehl if he had included syrup of phosphate of iron, quinine and strychnine, and an affirmative answer was given. Dr. Good then asked as to Glycerite, if that was included, and Prof. Diehl answered in the negative. Dr. Good made the comment: "You are not introducing the formula of the Pharmacopoeia, then?" To this Prof. Diehl responded that he was showing the formulas just as they had been approved, and if the Committee had

made any mistakes they were subject to correction. Dr. Good disclaimed any purpose of intimating that the Committee had made any mistake, but said he thought they would have made a mistake if they had admitted and continued the formula for syrup of phosphates of iron, quinine and strychnine as given in the present Pharmacopoeia.

Prof. Cook, of the Committee, said that what Prof. Diehl had stated, to the effect that the U. S. P. formulas admitted to the N. F. would be exactly like those formulas official, was true, with one or two exceptions. One exception was the syrup of iron, quinine and strychnine phosphates, to which Dr. Good had referred. This would be prepared by a formula similar to that of the U. S. P. of 1890, while the glycerite of U. S. P. VIII would not be admitted.

Prof. Diehl said these formulas were bound to come before the members of the Association before the new edition of the National Formulary was issued, anyhow, and any member—and particularly any member of the Committee—would have the opportunity of calling attention to any errors that might exist in them. There probably were some errors, he said, although they had tried to avoid them.

W. R. White, of Nashville, here asked if the Formulary Committee would continue hereafter its practice of sending out copies of the proposed formulas to the different Branches. He said the Nashville Branch had heretofore been receiving copies of these formulas, and they had taken it on themselves to make up sample preparations according to these proposed formulas, and have them exhibited at the various meetings of their branch. This had been very interesting and profitable work to them, in the way of practice. But they had not received any of these formulas for some time, and he wished to know if the practice of sending these out would be continued in the future.

Mr. Wilbert replied that these formulas had been sent out for criticism and suggestions, and the criticisms that had been received had been considered by the Committee. That work was in the past now, however.

Prof. Diehl added that the Committee was no longer discussing formulas, and if that question were reopened, it would probably take another seven years to arrive at a conclusion.

There were calls of "Question!" and the Chair stated that, without objection, the report would be received and referred to the general session.

The Chair stated that there was still a number of papers on the program, and some business not yet transacted, while the hour was late. He would, however, call on Dr. Kebler to present his paper on "Result of the Examination of Drugs at U. S. Ports."

Doctor Kebler said he would only give a very brief abstract of his paper, as he did not care to inflict any undue amount of fatigue on the members at this time of night; that he would content himself with stating in a few words just what the paper was.

There was no discussion of the paper, and it was referred to take the usual course.

At request of the writer, a paper on "An Open Letter from the Physicians

Concerning the Pharmacopœia," by R. H. Needham, was read by title and referred. (See October JOURNAL, p. 1260).

Mr. Needham presented in abstract his paper on "The Pharmacopœia, the Druggist and the Physician."

After a brief discussion of this paper by Mr. Gordon, on motion of Mr. Lascoff, it was received and referred to take the usual course.

A paper on "The Need for Some Official Guide to New Remedies," by John Roemer, was read by the Secretary, on motion of Dr. Good.

Mr. Wilbert, commenting on the paper just read, said that some four years ago this Association had created what was known as a Committee on Unofficial Standards, covering the suggestions made here. It was somewhat late, he thought, to have a paper on this subject, as the Association already had a Committee on it, and had even gone further and created a Committee on Proprietary medicines. He moved that the paper be referred to the Committee on Publication, without recommendation. He thought it was questionable whether it was necessary to publish in the Journal a set of recommendations to do something that had already been done. This motion was seconded by Mr. Good and carried.

A paper on "Bichloride Tablets of the German Pharmacopœia," was read by Mr. Raubenheimer, the author, who exhibited in connection with the reading of his paper various specimens of the tablets described.

There was no discussion of the paper, and on motion of Mr. Wilbert it was referred to take the usual course.

The Chair stated that there were still six papers on the program unread, whose authors were not present, and asked what disposition should be made of them.

On motion of Dr. Good as seconded and amended by Mr. Wilbert, these papers were read by title, and referred to the Publication Committee, without recommendation. They were as follows:

"A Pharmacopœia for the Physician and the Dispensing Druggist," by H. L. Chambers, M. D.

"Suggestions for a better U. S. P. and N. F. and Difficulties Encountered in the Enforcement of the Drug Laws in regard thereto," by A. R. Todd.

"A Volumetric Method for the Estimation of Mercury and Some of Its Compounds and Preparations," by Chas. H. LaWall.

"The Proposed Fluid Glycerates of the National Formulary," by E. R. Smith.

"The Proposed Additions to the National Formulary," by W. S. Amos.

"The Cause of Adulterated Preparations," by Walter H. Varnum.

The report of the Nominating Committee was now called for, and Mr. Lascoff reported that the Committee recommended the following.

For Chairman, E. Fullerton Cook, of Philadelphia.

For Secretary, R. H. Needham, of Texas.

For Associates, Bernard Fantus, of Chicago; W. R. White of Nashville; B. Rosin, of Philadelphia.

On motion of Dr. Good, seconded by Mr. Raubenheimer, the Report of the Committee was accepted, and the Chairman directed to cast the affirmative ballot of the Section electing the gentlemen named officers of the Section for the ensuing year. The Chair announced that the ballot had been cast as directed, and declared these gentlemen duly elected.

The Chair asked if there was any unfinished business to come before the Section. If not, he said he would appoint Dr. Good and Mr. Lascoff to escort the newly elected officers to the rostrum and introduce them to the Section.

These gentlemen gladly performed this pleasant duty, and first brought forward Chairman-elect Cook, who acknowledged the honor bestowed upon him, and reminded the members that both the new edition of the Pharmacopoeia and that of the National Formulary would be on the market before the Section met again, and there would "be lots of things doing on both lines." He promised to do all in his power to make the work of the Section a credit to the Association.

Secretary-elect Needham was next introduced, and said that he had had experience in the past in a like capacity, and promised to put his shoulder to the wheel and do what he could to advance the work of the Section during the year.

None of the Associates elected were present to be installed.

Retiring-Chairman Havenhill expressed his thanks for the able assistance rendered him during the year by Secretary Cook, and Associates Lloyd, Needham and Good, and also to the members of the Association generally for their assistance, and said he could ask for the incoming officers nothing better than that they should receive the same consideration.

Mr. Wilbert said he thought the American Pharmaceutical Association owed the retiring Chairman of this Section a very hearty vote of thanks for launching this Section at the Denver meeting, and carrying it on to success. He believed the members present, as representatives of the Association, should extend to Mr. Havenhill a rising vote of thanks for the splendid work he had done.

This motion was seconded by Messrs. Raubenheimer and Good, and carried unanimously.

This ended the business of the Section, and on motion of Dr. Good, seconded by Mr. Nitardy, an adjournment *sine die* was had.

UNITED STATES PHARMACOPOEIA.

NINTH REVISION.

ABSTRACT OF PROPOSED CHANGES WITH NEW STANDARDS AND DESCRIPTIONS.

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PART I—FIRST PROOF.

In conformity with the recommendation of the United States Pharmacopoeial Convention, the following abstract of proposed new descriptions and standards and of changes in descriptions and standards is submitted for general publication.

*Permission to reprint for purposes of comment can be had on application to the Chairman of the Board of Trustees, J. H. Beal, Scio, Ohio.

Where the changes are only in the form of expression without altering facts, these are not indicated. It is understood that if "no change" is reported, the material facts remain the same as in the *United States Pharmacopæia*, Eighth Revision.

Official methods with a description of the apparatus for taking melting points and boiling points will be inserted.

In the case of the hydrated crystalline salts, the rubric has been stated in the terms of the anhydrous compound with a lower limit corresponding to a salt of high purity and a higher limit corresponding to one in which a slight degree of efflorescence has taken place, the range being individually adjusted to meet existing conditions so far as possible.

In the case of hygroscopic salts, there has been established a limit of moisture, suitable to each particular case, which is a part of the rubric, and in the text the method for determining the moisture content is given.

Temperatures are stated only in the Centigrade scale.

A change has been made in many of the qualitative tests for purity by stating exact quantities of material and test solutions to be used. Some of the old tests were indefinite. The quantity of ash permitted on incinerating organic substances will be given in figures wherever possible.

Other abstracts will be submitted later. Comments should be sent to the Chairman of the Revision Committee, Joseph P. Remington, 1832 Pine street, Philadelphia, before December 1, 1913.

Acetanilidum.—Melting point changed from 113° C. to "from 111° C. to 113° C." Ash changed from non-weighable to "not exceeding 0.05 percent." Added test: A mixture of about 0.1 Gm. of Acetanilide and 1 Cc. of colorless nitric acid in a clean test-tube should not be colored yellow (acetphenetidin).

Acetphenctidinum.—A saturated aqueous solution should be neutral to litmus. Melting point changed from "134° to 135° C." to "from 133° to 135° C." Potassium dichromate replaces chromium trioxide in the color test. Ash changed from non-weighable to "not exceeding 0.05 percent." Added test: A mixture of about 0.005 Gm. of Acetphenetidin and 1 Cc. of nitric acid should be colored yellow, the color becoming darker on standing. The solution of about 0.5 Gm. in 5 Cc. of colorless sulphuric acid should not be more than faintly yellowish (readily carbonizable impurities).

Acidum Aceticum.—Rubric changed from "not less than 36 percent." to "not less than 36 nor more than 37 percent. by weight. Tests for copper with ammonia omitted.

Acidum Aceticum Dilutum.—Rubric changed from "not less than 6 percent." to "not less than 6 nor more than 6.5 percent. by weight."

Acidum Aceticum Glaciale.—Boiling point changed from "117° to 118° C." to "about 118° C." Congealing point changed from "somewhat below 15° C." to "not below 14.5° C."

Acidum Benzoicum.—The synthetic acid is described as being white, odorless, or with a slight odor of benzaldehyde; the natural Acid as white or yellowish; acquiring a darker color on exposure to light, and having a slight odor of benzoin. Melting point of synthetic Acid: 120° to 122° C. The natural Acid may have a lower melting point; changed from 121.4° C. Test with slaked lime omitted. Ash changed from non-weighable to "not exceeding 0.05 percent." Added Tests: A solution of about 0.1 Gm. of the synthetic Acid in 2 Cc. of sulphuric acid should not become darker than light yellow when warmed to 50° C. The color produced by the natural Acid, tested in the same manner, should not be darker than light brown (readily carbonizable impurities). Mix 0.5 Gm. of the Acid and about 1 Gm. of calcium carbonate (free from chloride) with a little distilled water in a crucible, dry the mixture and incinerate it at a low red heat. Dissolve the residue in 25 Cc. of diluted nitric acid (free from chloride) and filter. The addition of 0.5 Cc. of silver nitrate T. S. to the filtrate should not produce a greater turbidity than is produced by the same quantity of the reagent in a mixture of 25 Cc. of distilled water and 0.1 Cc. of tenth-normal hydrochloric acid V. S. if synthetic Acid be tested; or of 0.05 Cc. of tenth-normal hydrochloric acid V. S. if natural Acid be tested (chlorine).

Acidum Boricum.—No change.

Acidum Gallicum.—Test with calcium hydroxide omitted. Test for presence of tannic acid: A cold saturated aqueous solution of Gallic Acid should not yield a precipitate with gelatin T. S. or starch T. S.

Acidum Hydrochloricum.—No change.

Acidum Hydrocyanicum Dilutum.—Rubric changed from "not less than 2 percent." to "not less than 1.9 nor more than 2.1 percent. by weight." Process deleted. Method of estimation now directs weighing sample in an alkaline solution to prevent loss.

Acidum Hypophosphorosum.—No change.

Acidum Lacticum.—Rubric changed from "not less than 75 percent. by weight of absolute Lactic Acid" to "liquid containing lactic acid and lactic anhydrides equivalent to a total of not less than 85 percent. of lactic acid." Added test: On the addition of 1 Cc. of Lactic Acid, in drops, to 5 Cc. of ether, shaking after each addition, the ether-solution should not become even transiently turbid (glycerin). Assay: Weigh accurately about 2.5 Cc. of Lactic Acid in a stoppered 250 Cc. flask, add to it 50 Cc. of normal potassium hydroxide V. S. and a few drops of phenolphthalein T. S. and boil the liquid for 20 minutes. The residual titration of the boiling solution with normal sulphuric acid V. S. should show not less than 85 percent. of lactic acid.

Acidum Nitricum.—No change.

Acidum Nitrohydrochloricum.—Formula to make 100 Cc. instead of 1000 Cc. Added test: It should not be dispensed unless it readily liberates iodine when one drop is added to 1 Cc. of an aqueous solution of potassium iodide (1 in 10).

Acidum Nitrohydrochloricum Dilutum.—Formula to make 250 Cc. instead of

1000 Cc. Added test: It should not be dispensed unless it readily liberates iodine when five drops are added to 1 Cc. of an aqueous solution of potassium iodide (1 in 10).

Acidum Oleicum.—Congealing point changed to: Oleic Acid should not become semi-solid above 9° C.; on further cooling it congeals to a whitish, solid mass at or above 4° C. Ash: not exceeding .01 percent. Added test: On shaking Oleic Acid with an equal volume of distilled water, the separated water, after filtration, should be neutral or only faintly acid to litmus and should be neutral to methyl-orange T. S. (mineral acids). Tests for palmitic and stearic acids with lead acetate omitted.

Acidum Phosphoricum.—Assay: Weigh accurately about 1 Cc. of Phosphoric Acid in a tared weighing-bottle, transfer it to a 100 Cc. graduated flask and make it up to the mark with distilled water. Transfer 10 Cc. of this dilution to a 100 Cc. graduated flask, add a drop of phenolphthalein T. S. and neutralize it with sodium hydroxide T. S. (free from chloride). Add 50 Cc. of tenth-normal silver nitrate V. S. and agitate it, gradually adding zinc oxide (free from chloride) in small portions until the liquid is neutral to litmus. Now add distilled water to make the liquid measure 100 Cc., agitate it thoroughly, filter through a dry filter, collect 50 Cc. of the filtrate and add 2 Cc. of nitric acid and 2 Cc. of ferric ammonium sulphate T. S. The titration with tenth-normal potassium sulphocyanate V. S. to the production of a permanent red color, when calculated to the amount of Phosphoric Acid originally taken, should show not less than 85 percent. of absolute orthophosphoric acid.

Acidum Picricum.—Picric Acid (trinitrophenol): Pale yellow, rhombic prisms or scales, odorless, and having an intensely bitter taste. It explodes when heated rapidly and when subjected to percussion. Keep in well-stoppered bottles, in a cool place, remote from fire. An aqueous solution is acid to litmus. Melting point: 121° to 123° C. An aqueous solution of the Acid (1 in 100) has a yellow color, which becomes darker on the addition of alkalies, and red on the addition of ammonium sulphide T. S. or a solution of an alkaline cyanide; it should not at once become opalescent on the addition of barium chloride T. S. The amount of residue remaining after solution in benzole should not exceed 0.1 percent. when dried at 100° C.

Acidum Salicylicum.—Added description: Synthetic Salicylic Acid should be white and odorless; the natural Acid may be slightly yellowish or pinkish and have a slight, gaultheria-like odor. Melting point: changed from " 156° to 157° C." to "from 156° to 159° C." Ash: changed from 0.6 percent. to "not exceeding 0.1 percent." Methyl salicylate test omitted. Modified tests: On allowing a saturated, alcoholic solution of about 1 Gm. of Salicylic Acid to evaporate spontaneously in a glass or porcelain evaporating dish in a place protected from dust, the synthetic Acid should yield a perfectly white, crystalline residue, the natural Acid a white, or not more than slightly yellowish, or slightly pinkish residue (iron, phenol, or coloring matter). A solution of about 0.5 Gm. of the synthetic Salicylic Acid in 10 Cc. of sulphuric acid should not acquire more than a light yellow color within 15 minutes. The natural Salicylic Acid,

under similar conditions, may produce a slightly brownish color (organic impurities).

Acidum Stearicum.—Modified description: A mixture of fat acids consisting chiefly of Stearic Acid obtained from tallow or other fats. Melting point of official acid not below 56° C.; of pure Stearic Acid omitted. Added tests: Ash; not exceeding 0.1 percent. On shaking melted Stearic Acid with an equal volume of hot distilled water, the separated water, after filtration, should be neutral or only faintly acid to litmus paper and should be neutral to methyl-orange T. S. (mineral acids).

Acidum Sulphuricum.—No change.

Acidum Sulphuricum Aromaticum.—Rubric changed from "not less than 20 percent." to "not less than 18 nor more than 22 percent. by weight of H_2SO_4 ," contained as free sulphuric acid and ethyl-sulphuric acid. Identity test with barium chloride added. Assay changed to titration after boiling for six hours under a reflux condenser.

Acidum Tannicum.—Test with lime water omitted. Added test: Dried to constant weight at 100° C., Tannic Acid should not lose more than 12 percent. of its weight.

Acidum Trichloroaceticum.—Rubric added; it should contain, when dried to constant weight over sulphuric acid, not less than 99 percent. by weight. Reaction with ferric chloride omitted. Melting point: changed from " 52° C." to "about 55° C. after drying 24 hours over sulphuric acid." Added tests: When volatilized, not more than 0.05 percent. of residue should remain. For hydrochloric acid, using silver nitrate T. S. and for nitric acid, using ferrous sulphate and sulphuric acid in a contact test. Assay: titration with N/1 KOH V. S.

Aconitina.—Melting point omitted. Modified tests: On stirring about 0.001 Gm. of Aconitine with two or three drops of nitric or sulphuric acid on a white porcelain surface, it should dissolve without coloration; with a solution of ammonium vanadate in sulphuric acid (1 in 20) an orange color is produced under the same conditions. Ash: non-weighable.

Adeps.—Melting point: changed from " 38° to 40° C." to "from 36° to 42° C." Halphen's test for cotton seed oil omitted. Added tests: Saponification value: not less than 195 nor more than 203; iodine value: not less than 46 nor more than 70.

Adeps Lanac.—Melting point: changed from "about 40° C." to "from 38° to 42° C." Water limit fixed at 0.5 percent. and method of estimation added. Ash: changed from "0.3 percent." to "0.1 percent." Acidity reduced about one-half. Modified tests: On melting about 10 Gm. of Wool-Fat with 50 Cc. of distilled water on a water-bath with constant stirring, the fat should separate completely on cooling, leaving the aqueous layer nearly clear and neutral to litmus: separate portions of 10 Cc. each of the filtered aqueous layer should leave no sweet residue upon evaporation (glycerin), nor emit ammonia vapors when boiled with 1 Cc. of potassium hydroxide V. S. nor completely decolorize 0.05 Cc. of tenth-normal potassium permanganate V. S. within 10 minutes (soluble oxidizable impurities). Added tests: About 0.5 Gm. should be completely soluble in 40 Cc. of boiling absolute alcohol (petrolatum). Iodine value: 18 to 28.

Adeps Lanæ Hydrosus.—Rubric changed from "not more than 30 percent. of water" to "purified fat of the wool of sheep mixed with from 28 to 30 percent. of water." Estimation of water content modified to correspond.

Aethylis Carbamas.—Method of manufacture omitted. Added test: Its aqueous solution (1 in 20) should be neutral to litmus. Melting point: changed from "47.5° to 50° C." to "from 48° to 50° C." Ash changed from "non-weighable residue" to "not exceeding 0.05 percent." Added tests: For chloride, using silver nitrate; and for nitrate, using ferrous sulphate and sulphuric acid in a contact test.

Aethylis Chloridum.—Method of manufacture omitted. Boiling point changed from "12.5° to 13° C." to "from 12° to 13° C." Maintain 0° C. in tests for hydrochloric acid and alcohol.

Aethylmorphinæ Hydrochloridum.—The chloride of an alkaloid prepared from morphine by ethylation. A white or yellowish, microcrystalline powder, odorless, and having a bitter taste. Its aqueous solution should be neutral to litmus. Melting point: about 124° C. Identity tests: On adding a drop of ferric chloride T. S. to a solution of about 0.01 Gm. of the salt in 10 Cc. of sulphuric acid and warming on a water-bath, the color of the mixture will become at first green, then deep violet-blue, and on the further addition of a drop of nitric acid deep red; the chloride radical is identified by silver nitrate. Ash: non-weighable. When its aqueous solution is heated on a water-bath, the vapors should not be alkaline at once (ammonium compounds). Test for absence of morphine: On dissolving about 0.05 Gm. of potassium ferrieyanide in 10 Cc. of distilled water, adding a drop of ferric chloride T. S. and then 1 Cc. of an aqueous solution of the salt (1 in 100) no blue color should be produced at once.

Alcohol.—Residue on evaporation changed from non-weighable to "not exceeding 0.005 percent." Modified test: Dilute 1 Cc. of Alcohol (or an equivalent quantity of weaker Alcohol) to 10 Cc. with distilled water in a test-tube of about 40 Cc. capacity. Add 0.5 Cc. of sulphuric acid, cool the mixture and then add 5 Cc. of a cold aqueous solution of potassium permanganate (1 in 15). Allow the mixture to stand during two minutes, then dissolve the precipitate which has formed, by the addition of just enough sulphurous acid, and boil the liquid until the odor of acetaldehyde is no longer noticeable. Cool the liquid, add 1 drop of an aqueous solution of resorcinol (1 in 200) and pour 5 Cc. of this liquid upon 5 Cc. of sulphuric acid, contained in another test-tube, in such manner that the two liquids do not mix. Not more than a faint pink color and no rose-red colored zone nor whitish flakes should be produced near the point of contact after standing three minutes (methyl alcohol). Added test: A mixture of 5 Cc. of Alcohol, 2 Cc. of sodium hydroxide T. S., and 5 drops of a freshly prepared aqueous solution of sodium nitroprusside (1 in 50) rendered slightly acid with acetic acid, should not show a violet tint within one minute (acetone).

Alcohol Absolutum.—Added test: On shaking 10 Cc. of Absolute Alcohol in a stoppered tube with about 0.5 Gm. of powdered anhydrous copper sulphate, the latter should not become blue (water). Note: Official Absolute Alcohol, containing not more than 1 percent. of water, should not be confused with the term

"Absolute Alcohol" used in the tables in the Appendix or in definitions stating alcohol percent. when 100 percent. strength is indicated.

Alcohol Dilutum.—Rubric changed from "about 41.5 percent. by weight, or about 48.9 percent. by volume" to "from 41 to 42 percent. by weight or from 48.5 to 49.5 percent. by volume.

Aloinum.—A pentoside or mixture of pentosides obtained from Aloes, varying in chemical composition and physical and chemical properties according to its source. It becomes darker on exposure to light and air. Keep in well-stoppered bottles, protected from light. Aloin varies in solubility with its composition. A saturated aqueous solution of Aloin should be neutral or not more than faintly acid to litmus. Ash changed from "no residue" to "not exceeding 0.5 percent." Modified test: Dissolve 1 Gm. of Aloin in 120 Cc. of distilled water, collect the insoluble residue, if any, on a filter which has been dried at 100° C. and weighed, and wash it with 25 Cc. of distilled water. This residue when dried at 100° C. should not exceed 1.5 percent. Tests with sulphuric acid and potassium dichromate, with gold chloride, and with bromine water omitted.

Alumen.—Rubric changed from "not less than 99.5 percent. of pure Aluminum and Potassium Sulphate" to "not less than 54.21 nor more than 56.92 percent. anhydrous salt." Assay added: Precipitated as aluminum oxide by a slight excess of ammonia water in boiling solution containing ammonium chloride; precipitate washed, dried, ignited, and weighed.

Alumen Exsiccatum.—Must not contain more than 10 percent. of moisture. Assay added for moisture content and for salt as Al_2O_3 (see Alumen).

Alumini Hydroxidum.—No change.

Ammonii Benzoas.—Rubric changed from "not less than 98 percent." to "not less than 99 percent. by weight." Assay added: Benzoic acid liberated by sulphuric acid, shaken out with chloroform and weighed.

Ammonii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent." Assay changed to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S.

Ammonii Carbonas.—Rubric changed from "not less than 97 percent. of a mixture of Acid Ammonium Carbonate and Ammonium Carbamate and should yield not less than 31.58 percent. of ammonia gas" to "not less than 29 percent. nor more than 32 percent. of NH_3 ." Assay requires a weighing-bottle for immediate solution in N/1 H_2SO_4 V. S., followed by residual titration with N/1 KOH V. S.

Ammonii Chloridum.—Limit of 0.5 percent. of non-weighable matter permitted. Assay changed to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S.

Ammonii Iodidum.—Rubric changed from "not less than 97 percent." to "not less than 99 percent., when dried to constant weight." Limit of 2 percent. of moisture permitted; method for determination given. Assay changed to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S.

Ammonii Salicylas.—Rubric changed from "not less than 98 percent." to "not less than 99 percent." Assay added: Salicylic acid liberated by sulphuric acid, shaken out with chloroform and weighed.

Ammonii Valcras.—No change.

Amylis Nitris.—Added tests: On adding 2 Cc. of sulphuric acid to a mixture of 2 drops of Amyl Nitrite and 2 drops of water, amyl valerate is produced, recognizable by its odor on dilution with water. On adding a few drops of Amyl Nitrite to a mixture of 1 Cc. of ferrous sulphate T. S. and 5 Cc. of diluted hydrochloric acid, a greenish-brown color will be produced.

Antimonii et Potassii Tartras.—Rubric changed from "not less than 99.5 percent." to "not less than 98.5 percent." Assay requires immediate titration.

Antipyrina.—Method of manufacture omitted. Melting point changed from "113° C." to "from 109° to 111° C." Ash changed from non-weighable residue to "not exceeding 0.1 percent." Added tests: Antipyrine should be completely soluble in 1 part of cold distilled water, and the solution should be colorless or at most slightly yellowish when viewed crosswise in a test-tube of about 20 mm. diameter. An aqueous solution of Antipyrine (1 in 20), slightly acidulated with hydrochloric acid, should not respond to the Time-Limit Test for heavy metals. Tests to distinguish from acetanilide and acetphenetidin by nitric acid and for absence of acetanilide by phenyl-isocyanide reaction omitted.

Apomorphinae Hydrochloridum.—Added test: The addition of a solution of sodium bicarbonate to an aqueous solution of the salt (1 in 100) produces a white or pale greenish-white precipitate, which rapidly becomes green on exposure to air and then dissolves in ether with a violet color and in chloroform with a violet-blue color. The salt dissolves in nitric acid with a dark purple color. Ash: non-weighable. Tests with potassium nitrate and gold chloride omitted. Added test: On shaking about 0.1 Gm. of the salt with 10 Cc. of ether, the latter should acquire not more than a pale reddish color (decomposition products).

Argenti Nitras.—Assay changed from direct titration with N/10 NaCl V. S. to titration with N/10 KCNS V. S.

Argenti Nitras Fusus.—Assay changed so that a weighed quantity is dissolved as completely as possible in distilled water, the mixture filtered, nitric acid and ferric ammonium sulphate added and the liquid titrated with N/10 KCNS V. S. instead of with N/10 NaCl V. S.

Argenti Oxidum.—Rubric changed from "99.8 percent." to "not less than 99.6 percent. by weight of Ag_2O ." Limit of moisture not more than 5 percent. with method of estimation. Assay changed from ignition and weighing as silver to solution in nitric acid and titration with N/10 KCNS V. S.

Arseni Iodidum.—Rubric changed from "not less than 82 percent. of iodine" to "not less than 99 percent. by weight of AsI_3 ." Assay changed from titration with N/10 iodine V. S. to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S.

Arseni Trioxidum.—Assay changed: First dissolve the compound in sodium hydroxide T. S., carefully neutralize this solution, add sodium bicarbonate, and immediately titrate with N/10 iodine V. S.

Atropina.—Statement about presence of hyoscyamine omitted. Characteristics of the chloraurates omitted. Melting point changed from "113.8° C." to "from 114° to 115° C." Ash; non-weighable. Added tests: About 0.1 Gm. of Atropine, dissolved in 2 Cc. of sulphuric acid, should not produce more than a pale yellowish solution (readily carbonizable impurities), and only a light yellow

color should be produced upon the further addition of 0.1 Cc. of nitric acid (foreign alkaloids). An aqueous solution of Atropine (1 in 60) made with the aid of a slight excess of diluted sulphuric acid, is rendered turbid by the addition of a slight excess of sodium hydroxide T. S., but no turbidity should be produced immediately upon the addition of 2 Cc. of ammonia water to 5 Cc. of the solution (apoatropine, belladonnine). Tests with platonic chloride and with cresol omitted.

Atropine Sulphas.—Statement about presence of hyoscyamine omitted. Added tests: An aqueous solution should be neutral to litmus. Melting point changed from "189.9° C." to "about 188° C." Ash: non-weighable. Water of crystallization slowly lost over sulphuric acid. An aqueous solution (1 in 60) is rendered turbid by the addition of sodium hydroxide T. S., but no turbidity should be produced at once by the addition of 2 Cc. of ammonia water to 5 Cc. of the solution (apoatropine, belladonnine, etc.)

Auri et Sodii Chloridum.—Hygroscopic moisture limited to 3 percent. with method of estimation. Assay modified to ensure complete reduction.

Balsamum Tolutanum.—Acid value: not less than 112 nor more than 168. Saponification value: not less than 154 nor more than 191.

Benzaldehydum.—Boiling point changed from "179° to 180° C." to "from 178° to 182° C." Added test: Dissolve 1 Cc. of Benzaldehyde in 20 Cc. of alcohol, add distilled water until a slight turbidity is produced, and maintain a brisk evolution of hydrogen for one hour by the addition of zinc and diluted sulphuric acid. Filter and evaporate the liquid to about 20 Cc. On boiling 10 Cc. of the liquid with 1 drop of potassium dichromate T. S., no violet color should be produced (nitrobenzole). Tests with silver nitrate omitted. Assay omitted.

Benzinum Purificatum.—Purification process omitted. Boiling point changed from "45° to 60° C." to "should distil completely between 40° and 80° C."

Benzosulphinidum.—Added test: An aqueous solution is acid to litmus. When Benzosulphinide is fused at a low temperature with about five times its weight of sodium hydroxide, ammonia vapors are evolved; if the heating be continued until evolution of ammonia has ceased, the residue dissolved in 10 Cc. of distilled water, the solution neutralized with diluted hydrochloric acid, and filtered, then the filtrate will become colored violet on the addition of a drop of ferric chloride T. S. Ash: changed from non-weighable to "not exceeding 0.5 percent." Added tests: An aqueous solution (1 in 10,000) should have a distinctly sweet taste, comparable with that of an aqueous solution of sugar (1 in 12). No odor of ammonia should be noticeable on warming about 0.5 Gm. of Benzosulphinide with about 1 Gm. of magnesia and 10 Cc. of distilled water (ammonium compounds).

Betanaphthol.—Melting point changed from "122° C." to "from 120° to 122° C." Ash statement changed from "no residue on ignition" to "not exceeding 0.05 percent." Test with chlorinated lime omitted.

Bismuthi Betanaphtholas.—Compound of bismuth and betanaphthol of somewhat variable composition, yielding not less than 70 nor more than 78 percent. by weight of bismuth oxide. A buff-colored to grayish-brown, amorphous powder; odorless or having a faint odor of betanaphthol; tasteless; permanent in the air. On incineration, the residue is blackened by ammonium sulphide T. S. When a weighed quantity is decomposed by hydrochloric acid, shaken out with chloro-

form and the chloroform extractions evaporated, the weight of the residue should correspond to not less than 15 percent. of the weight of the salt taken. This residue, when crystallized from boiling water, should correspond to the tests for identity and purity given under Betanaphthol. The chloroform extract of the salt should yield not more than 1 percent. of residue (free betanaphthol). When shaken with distilled water and the mixture filtered, the filtrate should be colorless and neutral to litmus. Tests are applied for "limit of nitrates" and for lead, copper, silver and sulphate, as under Bismuth Subcarbonate. It should not respond to the Bettendorf's test for arsenic. Assayed by ignition to bismuth oxide and weighing.

Bismuthi et Ammonii Citras.—Rubric changed from "not less than 46 percent. nor more than 50 percent." to "not less than 46 nor more than 62 percent. by weight of bismuth oxide."

Bismuthi Subcarbonas.—No change.

Bismuthi Subgallas.—No change.

Bismuthi Subnitrates.—Moisture limit of 3 percent. with method for estimation.

Bismuthi Subsalcylas.—Rubric changed from "not less than 62 nor more than 64 percent." to "not less than 62 nor more than 66 percent. by weight of bismuth oxide."

Bromoformum.—Rubric changed from 99 percent. to "about 96 percent. by weight of bromoform, the remainder absolute alcohol." Specific gravity: changed from 2.808 to "from 2.595 to 2.620." Modified test: On evaporating 10 Cc. of Bromoform from a porcelain dish on a water-bath, not more than 0.02 percent. of residue should remain after drying at 100° C.

Bromum.—Assayed by titration with N/10 $\text{Na}_2\text{S}_2\text{O}_3$ V. S. in the presence of potassium iodide.

Caffeina.—Melting point changed from 236.8° C. to "from 233° to 237° C." Water of crystallization lost at about 100° C. Ash statement changed from no residue when sublimed to "not exceeding 0.1 percent." Sulphuric acid-bichromate test omitted. Added test: An aqueous solution of Caffeine yields with tannic acid a precipitate soluble in excess of the reagent.

Caffeina Citrata.—Added tests: Dissolve about 0.02 Gm. of Citrated Caffeine in 1 Cc. of hydrochloric acid in a porcelain dish, add 0.1 Gm. of potassium chlorate and evaporate the mixture on a water-bath. On now inverting the dish over a vessel containing a few drops of ammonia water, the residue will acquire a purple color, which is destroyed by alkalis. About 2 Cc. of an aqueous solution of Citrated Caffeine (1 in 10) mixed with 50 Cc. of lime water remains clear in the cold, but becomes turbid when heated to boiling. On cooling it again becomes clear. Dried to constant weight at 80° C., the loss should not exceed 5 percent. of the amount of Citrated Caffeine taken. Ash: not exceeding 0.1 percent. Time-Limit Test for heavy metals given. Test for sulphuric acid with barium chloride included. Assay: Dissolve 0.5 Gm. of Citrated Caffeine, previously dried to constant weight at 80° C., in 10 Cc. of hot distilled water, add an excess of sodium hydroxide T. S., cool the solution, and shake it in a separator with 3 successive portions of 20 Cc., 10 Cc., and 10 Cc., respectively, of chloroform, or more if necessary to complete the extraction. Evaporate the combined

chloroform extracts to dryness on a water-bath and dry the residue to a constant weight at 80° C. The weight of the anhydrous caffeine so obtained should correspond to not less than 48 percent. of the weight taken. The caffeine obtained should have the melting point given under *Caffeina*.

Caffeina Sodio-Benzoeas.—A mixture of Caffeine and Sodium Benzoate. Rubric: containing, when dry, not less than 44 percent. and not more than 50 percent. of anhydrous caffeine, the remainder being sodium benzoate as determined by the method given under *Sodii Benzoas*. A white powder, odorless, and of a bitter, aromatic taste. On heating, it is decomposed with the evolution of white vapors, leaving a carbonaceous residue that effervesces with acids and colors a non-luminous flame intensely yellow. An aqueous solution is neutral, slightly acid, or slightly alkaline to litmus, but should not be reddened by phenolphthalein T. S. Ferric chloride T. S. produces in an aqueous solution of the mixture a salmon-colored precipitate. The addition of diluted hydrochloric acid produces a white precipitate of benzoic acid, which, when thoroughly washed with cold water and dried, should have the melting point given under *Acidum Benzoicum*. About 0.1 Gm. of Caffeine with Sodium Benzoate should dissolve in 2 Cc. of sulphuric acid without producing more than a slight yellowish color (readily carbonizable organic matter). Time-Limit Test for heavy metals given. Dried to constant weight at 80° C., loss should not exceed 5 percent. Assay: Dissolve about 1 Gm. of dried Caffeine with Sodium Benzoate, accurately weighed, in 5 Cc. of distilled water in a separator, add 5 Cc. of sodium hydroxide T. S. and shake the mixture with four successive portions of 20 Cc., 10 Cc., 10 Cc., and 5 Cc. of chloroform. The combined chloroform extracts, on evaporating and drying to constant weight at 80° C., should yield a residue corresponding to not less than 44 percent. nor more than 50 percent. of anhydrous caffeine. The caffeine obtained in the above assay should respond to the tests of identity and should have the melting point given under *Caffeina*.

Calcii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent. by weight." Moisture limit 5 percent. with method for estimation. Assay based upon residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S.

Calcii Carbonas Præcipitatus.—Assay based on residual titration with N/1 KOH V. S. after dissolving the sale in N/1 HCl V. S. using methyl-orange T. S. as indicator.

Calcii Chloridum.—Moisture limit 3 percent. with method for estimation. Assay: residual titration with N/10 KCNS V. S. after addition of N/10 AgNO_3 V. S.

Calcii Hypophosphis.—Assay based on oxidation to phosphate and estimation by process similar to that under *Acidum Phosphoricum*.

Calcii Lactas.—Rubric requires "not less than 98 percent. of anhydrous calcium lactate when dried to constant weight at 120° C." Assay based on ignition and titration of residue with N/1 HCl V. S.

Calcii Phosphas Præcipitatus.—Rubric changed from "not less than 99 percent." to "not less than 96 percent. by weight of calcium phosphate" in dried product. Assay based on process outlined under *Acidum Phosphoricum*.

Calcii Sulphas Exsiccatus.—Rubric omitted.

Calx.—Water of hydration limit 10 percent. Added test: Add 5 Gm. of ammonium chloride to 20 Cc. of a solution prepared by slaking 5 Gm. of Calcium Oxide, mixing it with 100 Cc. of distilled water, and following with hydrochloric acid, drop by drop, with agitation until solution takes place. Then add ammonia water to give a distinct odor of ammonia after heating the solution to boiling, and an excess of ammonium oxalate T. S. and allow the mixture to stand three hours before filtering; the filtrate, brought to a volume of 100 Cc., should show no precipitate within one minute after the addition of 5 Cc. of sodium phosphate T. S. (magnesium). Assay based on residual titration with N/1 KOH V. S. after forming a solution in N/1 HCl V. S.

Calx Chlorinata.—No change.

Calx Sulphurata.—No change.

Camphora.—"Sublimes without leaving a residue" changed to "not exceeding 0.05 percent. of residue." Added test: A solution of Camphor in petroleum benzin (1 in 10) should be clear (moisture). Test for chlorinated products changed to: Hold the looped end of a piece of clean copper wire in a non-luminous flame until it glows, then cool the wire, dip the loop into melted Camphor, ignite the latter, and hold it so that the liquid burns outside of a non-luminous flame. On slowly bringing the flame from the burning Camphor on the loop in contact with the lower outer edge of the non-luminous flame, no green tinge should be discernible.

Camphora Monobromata.—Melting point changed from 76° C. to "from 74° to 76° C." Modified bromine identification test: On heating a mixture of about 0.1 Gm. each of Monobromated Camphor and silver nitrate and 2 Cc. each of nitric acid and sulphuric acid until nitrous vapors are no longer evolved, a yellowish precipitate of silver bromide will be obtained. Residue when volatilized changed from "no residue" to "not more than 0.05 percent." Added test: Shake about 0.5 Gm. of powdered Monobromated Camphor with 10 Cc. of distilled water and filter. The filtrate should be neutral to litmus and should not be rendered more than slightly opalescent by the addition of silver nitrate T. S.

Carbo Animalis Purificatus.—Added tests: Loss on drying at 100° C. for two hours, not exceeding 5 percent. On boiling 0.5 Gm. with 20 Cc. of distilled water, the filtrate should be neutral. On boiling 1 Gm. with 20 Cc. of distilled water and 1 Cc. of diluted hydrochloric acid, the filtrate should not respond to the Time-Limit Test for heavy metals.

Carbo Ligni.—Added test: It should burn without a luminous flame. Ash: Not exceeding 12 percent.

Cera Alba.—Melting point changed from "64° to 65° C." to "from 62° to 65° C." Added test: Acid value: not less than 18 nor more than 25. Ester value: not less than 72 nor more than 79. The ratio of acid value to ester value as 1:3.6 to 3.8.

Cera Flava.—Added test: Melt the Wax at a low temperature and allow it to fall in separate drops from just above the surface into alcohol that has been warmed to from 45° to 50° C. Allow the globules to remain in the alcohol until it has cooled spontaneously to room temperature (20° to 25° C.), then remove the Wax and keep it at room temperature for 24 hours. Prepare a mixture of 4 volumes of alcohol and enough distilled water to make 10 volumes and allow it to stand until free from air bubbles. Moisten the globules of Wax with distilled water, by means of a brush, and place them by means of forceps in the alcohol solution just prepared contained in a beaker. Then add alcohol or air-free distilled water as required to the mixture, kept at 25° C., until the globules of Wax float indiscriminately at all levels of the liquid and finally determine the specific gravity of the liquid. The figure thus obtained is the specific gravity of the sample of Wax examined. Melting point changed from "62° to 64° C." to "from 62° to 65° C." Test for paraffin or ceresin omitted. Weigh accurately about 3 Gm. of Yellow Wax, warm it in a 200 Cc. flask with 25 Cc. of absolute alcohol until melted, then add 1 Cc. of phenolphthalein T. S. and titrate the mixture while warm with half-normal alcoholic potassium hydroxide V. S. to a faint pink color. Acid value so obtained should not be less than 18 nor more than 24. Now add 25 Cc. of half-normal alcoholic potassium hydroxide V. S. and 50 Cc. of alcohol, boil the mixture for two hours under a reflux condenser and titrate the excess of the alkali with half-normal hydrochloric acid V. S. Ester value so obtained should not be less than 72 nor more than 77. Ratio of acid value to ester value as 1:3.6 to 3.8.

Cerii Oxalas.—No change.

Cetaceum.—Specific gravity: changed from "0.935 to 0.944" to "from 0.938 to 0.944 at 25° C." Specific gravity at 100° C. omitted. Added test: It should dissolve completely in 50 parts of boiling alcohol (paraffin), the solution being neutral or not more than slightly acid to moistened litmus paper. Ammonia water replaces sodium carbonate and alcohol in test for stearic acid.

Chloralformamidum.—Melting point changed from "114° to 115° C." to "from 114° to 117° C." Ash: changed from non-weighable to "not exceeding 0.05 percent."

Chloralum Hydratum.—Rubric added requiring 99.5 percent. by weight. Melting point changed from 58° C. to "from 52° to 56° C." Specific gravity when liquefied and solidification statements omitted. Residue, on heating, not more than 0.05 percent. Modified test for hydrochloric acid and chlorides: An alcoholic solution should not at once redden moistened blue litmus paper, nor at once become opalescent on the addition of silver nitrate T. S. Added tests: Shake about 0.5 Gm. of Hydrated Chloral at intervals of five minutes during one hour with 5 Cc. of sulphuric acid in a glass-stoppered tube, which has previously been rinsed with sulphuric acid. The acid should appear colorless, or very nearly colorless, when viewed transversely in a tube of not less than 15 mm. diameter (organic impurities). Assay: Weigh accurately about 4 Gm. of Hydrated Chloral, dissolve it in 10 Cc. of distilled water, add 30 Cc. of normal potassium hydroxide V. S. and allow the mixture to stand 2 minutes; then add phenol-

phthalein T. S. and determine the residual alkali at once by titration with normal sulphuric acid V. S. It should show not less than 99.5 percent. of hydrated chloral.

Chloroformum.—Specific gravity: changed from "not below 1.476" to "from 1.474 to 1.478."

Chromii Trioxidum.—Rubric changed from "not less than 90 percent." to "not less than 95 percent. by weight. Assay requires a weighing bottle.

Chrysarobinum.—Specific gravity and melting point omitted. Ash: changed from "when ignited entirely consumed" to "not exceeding 0.25 percent." Tests with lime water and with potassium dichromate omitted. Added test: Boil about 0.1 Gm. of Chrysarobin with 20 Cc. of distilled water and filter. The filtrate should be neutral to litmus and should not be colored by ferric chloride T. S. (chrysophanic acid).

Cinchonidinae Sulphas.—Melting point and potassium dichromate test omitted. Ash changed from "consumed without residue" to "not exceeding 0.1 percent."

Cinchoninae Sulphas.—Melting point omitted. Ash: changed from "no residue on incineration" to "not exceeding 0.1 percent." Modified test for quinine or cinchonidine sulphate: One-tenth Gm. of the powdered salt should dissolve completely or nearly so when shaken with 10 Cc. of chloroform, at ordinary temperatures.

Cocaina.—Melting point: changed from 98° C. to "from 96° to 98° C." Ash: changed from "no residue on ignition" to "not exceeding 0.1 percent."

Cocainae Hydrochloridum.—Melting point changed from 189.9° C. to "from 188° to 191° C." Tests with potassium chromate, mercuric chloride, and palladous chloride omitted. Added test: On dissolving about 0.1 Gm. of the salt in 1 Cc. of sulphuric acid, it will produce no color other than slight yellowish; if the solution be kept at 100° C. for five minutes, then cautiously mixed with 2 Cc. of distilled water, the aromatic odor of methyl benzoate will be noticeable and on cooling crystals of benzoic acid will form. Ash: changed from "no residue on incineration" to "not exceeding 0.05 percent." Isatropyl-cocaine test requires precipitate to form within five minutes after five minutes' vigorous stirring.

Codeina.—Melting point changed from 154.9° C. to "about 155° C." Ash changed from "no residue on incineration" to "not exceeding 0.1 percent." Test for morphine by nitric acid omitted.

Codeinae Phosphas.—Water of crystallization changed from 2 molecules to 1½ molecules. Melting point omitted. Added tests: An aqueous solution of Codeine Phosphate (1 in 100) acidulated with nitric acid should not at once become turbid on the addition of barium chloride T. S. (sulphates) or silver nitrate T. S. (chlorides). Percent. of codeine raised to 67.

Codeinae Sulphas.—No change.

Colchicina.—Melting point changed from 142.5° C. to "about 145° C." Potassium dichromate and ferric chloride and chloroform tests omitted. Ash: changed from "no residue on incineration" to "non-weighable." Added test: On heating a mixture of about 0.01 Gm. of Colchicine, 2 Cc. of potassium hydroxide T. S., and 1 drop of aniline, no odor of phenyl-isocyanide should be developed (chloroform).

Copaiba.—Specific gravity: changed from "0.950 to 0.995" to "from 0.940 to 0.995". Resinous mass after volatile oil is driven off changed from "not less than 50 percent." to "not less than 36 percent." Acid value; not less than 28 nor more than 95. Modified test for gurgun balsam: Dissolve 3 or 4 drops of the volatile oil separated from Copaiba by distillation with steam, in 3 Cc. of glacial acetic acid, mix the solution with 1 drop of a freshly prepared aqueous solution of sodium nitrite (1 in 10), and carefully underlay this with 2 Cc. of sulphuric acid. The acetic layer should not be colored pink. Added tests: Dissolve 0.1 Gm. of rosin with the aid of heat in 0.9 Gm. of Copaiba, shake the solution violently with 10 Cc. of ammonia water, and allow the mixture to stand 24 hours. No gelatinization should take place (rosin). The volatile oil separated from Copaiba by distillation with steam should not boil below 250° C. and should show an angle of rotation in a 100 mm. tube of not less than -7° at 25° C. (African "Copaiba").

Creosotum.—Solubility, color of the tribrom-compound and alcoholic potassium hydroxide tests omitted. Modified distillation test: It should begin to distil between 195° and 200° C. and not less than 80 percent. by volume should come over between 200° and 220° C.

Creosoti Carbonas.—A mixture of the carbonates of various constituents of creosote, chiefly guaiacol and creosol. Specific gravity: 1.145 to 1.170 at 25° C. On heating about 0.5 Cc. of Creosote Carbonate a few minutes with 10 Cc. of alcoholic potassium hydroxide T. S., and cooling the mixture, a crystalline precipitate is formed, which effervesces with acids. Ash: not exceeding 0.1 percent. A saturated alcoholic solution should be neutral to moistened litmus paper, and should acquire only a yellow color on the addition of ferric chloride T. S. (creosote). Heat 25 Cc. of Cresote Carbonate on a water-bath for half an hour with a solution of 15 Gm. of potassium hydroxide in 100 Cc. of alcohol, then evaporate the alcohol and mix the residue with an excess of hydrochloric acid. A liquid composed of two layers will be obtained. On now separating the dark layer of cresote and shaking it with successive portions of 10 Cc. each of distilled water until the washings are only slightly acid to litmus, it should have the boiling point given under Creosotum; the distillate, after separation of adhering water, should respond to the remaining tests of identity and purity given under Creosotum.

Creta Præparata.—Rubric added requiring "not less than 97 percent. by weight of CaCO_3 . Added test: Residue insoluble in hydrochloric acid not exceeding 2 percent. Assay: as given under Calcii Carbonas Præcipitatus.

Cupri Sulphas.—Rubric changed from "not less than 99.5 percent. of pure Copper Sulphate" to "not less than 63.61 percent. nor more than 66.79 percent. by weight of anhydrous CuSO_4 . Assay based on titration with N/10 $\text{Na}_2\text{S}_2\text{O}_3$ V. S. after the addition of potassium iodide.

Diacetylmorphina.—Melting point: about 172° C. On dissolving about 0.01 Gm. in a few drops of nitric acid, a yellow color is produced, gradually changing to greenish-blue. On heating about 0.1 Gm. with 1 Cc. of alcohol and 1 Cc. of sulphuric acid, ethyl acetate is produced, recognizable by its odor. Ash: not exceeding 0.1 percent. On dissolving 0.2 Gm. of Diacetylmorphine in 5 Cc. of

distilled water with the aid of a few drops of hydrochloric acid, and then pouring this solution slowly into 5 Cc. of a 5 percent. potassium hydroxide solution, shaking the test-tube occasionally, a white precipitate will be formed, which is quickly redissolved, yielding a clear solution (other alkaloids). On heating this solution, no odor of ammonia should be noticeable (ammonium salts). A solution of about 0.02 Gm. in 2 Cc. of sulphuric acid should not be colored (organic impurities). Dissolve about 0.05 Gm. of potassium ferricyanide in 10 Cc. of distilled water, add 1 drop of ferric chloride T. S. and then 1 Cc. of an alcoholic solution of Diacetylmorphine (1 in 100); no blue color should be produced at once (morphine). Dissolve 1 Gm. of Diacetylmorphine in 10 Cc. of distilled water and 5 Cc. of diluted hydrochloric acid in a porcelain dish, and evaporate the solution on a water-bath to a syrupy consistence (to about 2 Cc.) Transfer this residue to a separatory funnel with the aid of 25 Cc. of distilled water, render it alkaline with sodium hydroxide solution (10 percent.) and then shake it out with 3 successive portions of 15, 10 and 5 Cc. of chloroform, passing the chloroform through a small filter previously moistened with chloroform. Evaporate the combined chloroform solution to dryness, dissolve the residue in 10 Cc. of fiftieth-normal sulphuric acid V. S., add a few drops of cochineal T. S. and titrate the excess of the acid with fiftieth-normal potassium hydroxide V. S. Not less than 7.5 Cc. of the latter should be required (limit of foreign alkaloids).

Diacetylmorphinae Hydrochloridum.—An aqueous solution should be neutral or not more than faintly acid to litmus. Melting point: about 230° C. with partial decomposition. An aqueous solution yields with silver nitrate T. S. a white precipitate insoluble in nitric acid. In other respects the salt should respond to the tests of identity and purity given under Diacetylmorphina.

Diastaseum.—A mixture containing amylolytic enzymes obtained from an infusion of malt. It should be capable of converting not less than 50 times its weight of starch into sugar. Mix a quantity of potato starch, which has been purified as described under Pancreatinum, equivalent to 5 Gm. of dry starch, in a beaker with 10 Cc. of cold distilled water. Add 140 Cc. of boiling distilled water, and heat the mixture on a water-bath with constant stirring for 2 minutes, or until a translucent, uniform paste is obtained. Cool the paste to 40° C. in a water-bath previously adjusted to this temperature, and add a solution of 0.1 Gm. of Diastase in 10 Cc. of distilled water at 40° C., just previously made. Mix well and maintain the same temperature for exactly 30 minutes, stirring frequently, when a thin, nearly clear liquid should be produced. At once add 0.1 Cc. of this liquid to a previously made mixture of 0.2 Cc. of tenth-normal iodine V. S. and 60 Cc. of distilled water. No blue nor reddish color should be produced.

Elaterinum.—Melting point omitted. Added tests: On stirring about 0.01 Gm. of Elaterin with 1 Cc. of sulphuric acid, only a yellow color should be produced (readily carbonizable impurities). A solution of about 0.01 Gm. of Elaterin in 5 Cc. of melted phenol becomes crimson on the addition of a few drops of sulphuric acid and rapidly changes to scarlet. Ash statement changed from "no residue on ignition" to "non-weighable." On shaking about 0.1 Gm. of Elaterin with a mixture of 9 Cc. of distilled water and 1 Cc. of diluted hydrochloric acid,

separate portions of the filtered liquid should not yield turbidity or precipitate with potassium mercuric iodide T. S. or iodine T. S. (alkaloids). Identity tests with sulphuric acid, ammonium vanadate and potassium dichromate omitted.

Eucalyptol.—Boiling point changed from "176° to 177° C." to "about 177° C." Congealing point changed from "somewhat below 0° C." to "not below 0° C."

Eugenol.—Specific gravity changed from "1.066 to 1.068" to "from 1.064 to 1.070" and boiling point changed from "251° to 253° C." to "from 250° to 255° C." It is strongly refractive.

Ferri Carbonas Saccharatus.—Assay changed from titration with N/10 KMnO_4 V. S. to titration with N/10 $\text{K}_2\text{Cr}_2\text{O}_7$ V. S.

Ferri Chloridum.—Rubric changed from "not less than 22 percent. of metallic iron in the form of chloride" to "ferric chloride in hydrated form corresponding to not less than 21 percent. by weight of iron." During evaporation retain a small excess of hydrochloric acid. Assay: weighing-bottle directed.

Ferri et Ammonii Citras.—No change.

Ferri et Quininæ Citras.—No change.

Ferri et Quininæ Citras Solubilis.—No change.

Ferri Hydroxidum cum Magnesi Oxido.—Reverse the order of mixing the Iron and Magnesia.

Ferri Phosphas Solubilis.—No change.

Ferri Pyrophosphas Solubilis.—No change.

Ferri Sulphas.—Rubric changed from "not less than 99.5 percent. of pure Ferrous Sulphate" to "not less than 54.36 nor more than 57.07 percent. of anhydrous FeSO_4 ."

Ferri Sulphas Exsiccatus.—Rubric added requiring not less than 80 percent. by weight of anhydrous FeSO_4 .

Ferri Sulphas Granulatus.—Assay as under Ferri Sulphas.

Ferrum.—No change.

Ferrum Reductum.—Assay: Weigh accurately about 1 Gm. of Reduced Iron, previously well triturated, introduce it into a 100 Cc. measuring flask and add 10 Gm. of finely powdered mercuric chloride and 50 Cc. of boiling distilled water. Keep the mixture boiling on wire gauze over a small flame for five minutes, shaking it frequently; then fill the flask to the 100 Cc. mark with distilled water, recently boiled and cooled, and cool to room temperature. Again fill the flask to the mark, agitate the contents well, stopper, and allow it to stand for a few minutes. Now filter the contents of the flask and immediately titrate 10 Cc. of the filtrate, to which has been added 10 Cc. of diluted sulphuric acid, with tenth-normal potassium permanganate V. S. It should show not less than 90 percent. of Reduced Iron when calculated to the original weight of iron taken.

Glycerinum.—Odor: changed from "odorless" to "not more than a slight, characteristic odor, which is neither harsh nor disagreeable." Specific gravity: changed from "not less than 1.246" to "not below 1.249." Added test: On heating a few drops of Glycerin with about 0.5 Gm. of potassium bisulphate, pungent odors of acrolein will be evolved. Glycerin should appear colorless when viewed transversely in a tube of colorless glass not more than 30 mm. in diameter. Modified residue test: Heat 50 Gm. of Glycerin in an open, shallow 100 Cc. porcelain

or platinum dish until it ignites, then allow it to burn without further application of heat in a place free from draught. Not more than 0.015 percent. of carbonaceous and mineral residue should remain. This residue, when subjected to a low red heat, until combustion is complete, should leave not more than 0.007 percent. of mineral residue, and this residue, when dissolved in 10 Cc. of distilled water and titrated with hundredth-normal silver nitrate V. S., using potassium chromate T. S. as indicator, should indicate the absence of chlorides exceeding 0.001 percent. calculated as sodium chloride. Added tests: Mix 100 Gm. of Glycerin with 200 Cc. of freshly boiled distilled water and 5 Cc. of normal potassium hydroxide V. S. and boil the mixture for five minutes. It should require not less than 4 Cc. of normal hydrochloric acid V. S. for neutralization, using phenolphthalein T. S. as indicator (limit of fat acids and esters). A mixture of 5 Cc. of Glycerin and 5 Cc. of an aqueous solution of potassium hydroxide (1 in 10) should not become yellow when kept for 5 minutes at 60° C. (acrolein, glucose) nor emit an ammoniacal odor (ammonium compounds).

Glycyrrhizinum Ammoniatum.—Ash changed from "not more than a trace" to "not exceeding 0.2 percent."

Gossypium Purificatum.—Ash changed from "not exceeding 0.3 percent." to "not exceeding 0.2 percent." Added tests: Thoroughly saturate about 10 Gm. of Purified Cotton with 100 Cc. of distilled water in a glass jar, then press out into white, porcelain dishes with the aid of a glass rod two portions of the water, 25 Cc. each. Add to one portion 3 drops of phenolphthalein T. S. and to the other portion 1 drop of methyl-orange T. S. No pink color should develop in either portion (alkali or acid). Extract 5 Gm. of Purified Cotton in a narrow percolator with ether until 20 Cc. of percolate is secured and evaporate the percolate to dryness. The residue should not exceed 0.6 percent. (fatty matter). Extract 10 Gm. of Purified Cotton in a narrow percolator with alcohol until 100 Cc. of percolate is obtained. When observed downward through a column 20 cm. in depth, the percolate may show a yellowish color, but should not display a blue or green tint (dyes); and, on evaporation to dryness, the residue should not weigh more than 0.5 percent. (resins and soap).

Guaiacol.—Specific gravity changed from "1.110 to 1.114" to "from 1.120 to 1.140." Melting point changed from 28.5° C. to "about 28° C." Boiling point changed from 205° C. to "from 200° to 205° C." Added test: Residue when volatilized not more than 0.1 percent. Benzin mixture should separate into two clear layers.

Guaiacolis Carbonas.—Melting point: changed from "84° to 87° C." to "from 83° to 87° C." Added test: Ash not exceeding 0.1 percent. Modified tests: A saturated alcoholic solution should not respond to the ferric chloride test nor be acid to moisten litmus paper. Added test: One-tenth Gm. of Guaiacol Carbonate should dissolve in 2 Cc. of sulphuric acid without producing other than a faint yellowish color. Heat about 0.5 Gm. of Guaiacol Carbonate for a few minutes with 10 Cc. of alcoholic potassium hydroxide T. S. and cool the mixture. A crystalline precipitate is formed, which effervesces with acids; if the alcohol be evaporated from the filtrated liquid, the residue supersaturated with diluted

sulphuric acid and extracted with ether, the separated ether layer, upon spontaneous evaporation of the ether, leaves a residue which should respond to the tests of identity given under Guaiacol.

Hexamethylenamina.—Tannic acid and mercuric chloride tests omitted. Added tests: Ash not exceeding 0.05 percent. An aqueous solution of Hexamethylenamine (1 in 50) should not become colored or turbid when mixed with an equal volume of hydrogen sulphide T. S. (heavy metals); on acidulating an aqueous solution (1 in 50) with nitric acid, separate portions of it should not be rendered turbid by barium chloride T. S. (sulphate), nor more than slightly opalescent by silver nitrate T. S. (chloride). On adding 1 Cc. of alkaline mercuric potassium iodide T. S. to 10 Cc. of an aqueous solution of Hexamethylenamine (1 in 20), no color should be produced (ammonium salts).

Homatropinae Hydrobromidum.—Melting point changed from 213.8° C. to "about 212° C. with partial decomposition." Ash: changed from "no residue upon incineration" to "non-weighable." Sulphuric acid and potassium dichromate tests and the separation of the base omitted.

Hydrargyri Chloridum Corrosivum.—Assays: as HgS; an alternative electrolytic method also given.

Hydrargyri Chloridum Mite.—Rubric changed from "not less than 99.5 percent." to "not less than 99.8 percent. by weight." Assays: Solution in N/10 iodine V. S. and residual titration with N/10 $\text{Na}_2\text{S}_2\text{O}_8$ V. S.; an alternative electrolytic method also given.

Hydrargyri Iodidum Flavum.—Rubric changed from "not less than 99.5 percent." to "not less than 99 percent. by weight." Assays: as under Hydrargyrum Chloridum Mite.

Hydrargyri Iodidum Rubrum.—Rubric changed from "not less than 98.5 percent." to "not less than 99 percent. by weight." Assay: electrolytic.

Hydrargyri Oxidum Flavum.—Moisture limit 1 percent. with method for estimation. Assays: solution in HNO_3 and titration with N/10 KCNS V. S.; alternative electrolytic method also given.

Hydrargyri Oxidum Rubrum.—Moisture limit 1 percent. with method for estimation. Assays: solution in HNO_3 and titration with N/10 KCNS V. S.; an alternative electrolytic method also given.

Hydrargyri Salicylas.—Rubric given requiring from 54 to 59.5 percent. of mercury. Identity tests consist of the formation of mercuric iodide when heated with iodine and the separation and identification of salicylic acid. Ash not exceeding 0.2 percent. The salt should not have an acid reaction (free salicylic acid) nor develop a dark color at once when shaken with hydrogen sulphide T. S. (foreign mercury compounds); 0.2 Gm. should dissolve completely in 4 Cc. of N/1 NaOH V. S. Assay: Weigh accurately about 0.5 Gm. of Mercuric Salicylate and digest it in 15 Cc. of sulphuric acid and 10 Cc. of nitric acid on a water-bath until dissolved. Cool the solution, then dilute it with 150 Cc. of distilled water, add 30 Cc. of solution of hydrogen dioxide and mix well. Now add gradually with constant stirring 5 Cc. of diluted hypophosphorous acid, then 5 Gm. of sodium chloride dissolved in 20 Cc. of distilled water; stir thoroughly and allow it to stand until the precipitate has subsided. Filter and wash the

precipitate and filter well with distilled water. Transfer the precipitate and filter to a flask, add 50 Cc. of tenth-normal iodine V. S. and 2 Gm. of potassium iodide and agitate the mixture until all of the precipitate has been dissolved. Titrate the excess of tenth-normal iodine V. S. with tenth-normal sodium thiosulphate V. S. It should not show less than 54 nor more than 59.5 percent. of mercury.

Hydrargyrum.—Rubric changed from "not less than 99.9 percent." to "not less than 99.5 percent. by weight." Assays: solution in HNO_3 and titration with N/10 KCNS V. S.; an alternative electrolytic method also given.

Hydrargyrum Ammoniatum.—Assay: electrolytic.

Hydrargyrum cum Creta.—Rubric added requiring not less than 37 nor more than 39 percent. by weight of Hg. Assay: solution in HNO_3 and titration with N/10 KCNS V. S.

Hydrastina.—Melting point: changed from 131° C. to "about 131° C." Ash: non-weighable. Added tests: A solution of about 0.1 Gm. of Hydrastine in 10 Cc. of diluted sulphuric acid develops a blue colored fluorescence on the addition of potassium permanganate T. S., but no fluorescence should be visible before the addition of the reagent (hydrastinine). An aqueous solution of Hydrastine (1 in 20) made with the aid of a slight excess of diluted hydrochloric acid, should not be reddened by chlorine water (berberine). Sulphuric acid and potassium dichromate test omitted.

Hydrastinae Hydrochloridum.—An aqueous solution should be neutral or only slightly acid to litmus. An aqueous solution yields with silver nitrate T. S. a white precipitate insoluble in nitric acid. In other respects the salt should respond to the tests of identity and purity given under Hydrastina.

Hydrastinae Hydrochloridum.—Melting point changed from 212° C. to "about 210° C." Ash: changed from "completely consumed" to non-weighable. Sulphuric and nitric acid test omitted.

Hyoscyaminae Hydrobromidum.—Melting point: changed from 151.8° C. to "about 152° C." Melting points of chloraurates and picrates omitted. Ash: changed from "no residue on incineration" to non-weighable. Modified morphine test: About 0.05 Gm. of the salt should dissolve in 1 Cc. of sulphuric acid with not more than a faint yellow color (carbonizable impurities). On adding a drop of nitric acid to this acid solution, an orange color due to the liberation of bromine will be produced, but no deep red color fading to orange should be noticeable.

Iodoformum.—Modified tests: On shaking about 2 Gm. of Iodoform for 1 minute with 10 Cc. of distilled water, the filtrate should be colorless and free from bitter taste (soluble yellow coloring matters, picric acid, etc.); it should not affect the color of litmus (acids or alkalies). Silver nitrate test for iodides omitted.

Iodum.—Rubric changed from "not less than 99 percent." to "not less than 99.5 percent. by weight."

Limonis Succus.—Rubric added requiring from 7 to 9 percent. of citric acid. It should be free from added preservatives; preserved by sterilization. Specific gravity changed from "1.030 to 1.040" to "from 1.030 to 1.045." Added tests: Silver nitrate test for hydrochloric acid. On boiling Lemon Juice with metallic copper, no reddish vapors should be evolved (nitric acid). Modified tartaric

acid test: On the addition of sufficient lime water to 1 Cc. of boiled and filtered Lemon Juice to render the mixture alkaline, the liquid should remain clear; on boiling, it becomes opaque through the precipitation of calcium citrate. Assay: The titration of about 10 Cc. of Lemon Juice, accurately weighed, with normal potassium hydroxide V. S., using phenolphthalein T. S. as indicator, should show from 7 to 9 percent. of citric acid.

Lithii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent. by weight in the dried salt." Water limit 15 percent. with method for estimation. Assay changed from direct titration with N/10 AgNO_3 V. S. to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S. in excess.

Lithii Carbonas.—No change.

Lithii Citras.—Moisture limit 3 percent. with method for estimation. Assay changed from conversion to sulphate and weighing of residue, to ignition and residual titration with N/2 H_2SO_4 V. S. and N/1 KOH V. S.

Lithii Salicylas.—Assay as under *Lithii Citras*, using N/1 HCl V. S. instead of N/2 H_2SO_4 V. S.

Magnesiæ Carbonas.—No change.

Magnesiæ Oxidum.—Rubric changed from "not less than 96 percent." to "not less than 95 percent. by weight after ignition." Water limit, 15 percent. with method for estimation.

Magnesiæ Oxidum Pondrosum.—Rubric added requiring "not less than 95 percent. by weight of MgO after ignition."

Magnesiæ Sulphas.—Rubric changed from "not less than 99.7 percent. of pure magnesium sulphate" to "not less than 48.59 nor more than 51.02 percent. by weight of anhydrous MgSO_4 ." Assay added directing precipitation, ignition, and weighing as magnesium pyrophosphate.

Maltum.—Rubric added requiring that it should be capable of converting not less than 5 times its weight of starch into sugars. For determining soluble constants, acidity and starch converting power prepare an infusion as follows: Mix 10 Gm. of Malt in No. 12 powder with 100 Cc. of distilled water and maintain the mixture at a temperature of from 50° to 55°C . for one hour with occasional stirring. Place it upon a filter and when it has drained, wash the contents of the filter with distilled water in small portions, until the combined infusion and washings measure 200 Cc. To determine the starch converting power of Malt, proceed as directed under *Diastasum*, using 20 Cc. of the freshly prepared infusion in place of the solution of diastase there directed.

Mangani Dioxidum Præcipitatum.—No change.

Mangani Hypophosphis.—Assay added as under *Calcii Hypophosphis*.

Mel.—Ash changed from 0.3 percent. to "not less than 0.1 nor more than 0.8 percent." Added tests: The color of an aqueous solution of Honey (1 in 2) should not be changed at once when mixed with an equal volume of ammonia water (foreign coloring matter); 5 Cc. of the aqueous solution should not at once acquire a red or rose color on the addition of a few drops of hydrochloric acid (azo dyes). A solution of 10 Gm. of Honey in 50 Cc. of distilled water should not require more than 0.5 Cc. of normal potassium hydroxide V. S. for

neutralization, phenolphthalein T. S. being used as indicator. On shaking 1 Cc. of aniline with 1 Cc. of distilled water and enough glacial acetic acid to produce a clear liquid and permitting this to flow down the wall of a test-tube upon 5 Cc. of a solution of Honey in an equal weight of distilled water, so as to form a separate layer, no red or pink zone should be produced within 15 minutes (invert sugar).

Mel Depuratum.—No change.

Menthol.—Melting point changed from 43° C. to "from 42° to 44° C." Boiling point omitted. Residue: when volatilized, changed from "no residue" to "not exceeding 0.05 percent."

Methylthionine Hydrochloridum.—Ash: changed from 0.4 percent. to "not exceeding 1 percent." Modified arsenic test: Intimately mix 0.5 Gm. of Methylthionine Hydrochloride with about 1 Gm. each of potassium nitrate and anhydrous sodium carbonate and heat the powdered mixture in a crucible until organic matter is completely oxidized. Then dissolve the cooled residue in 15 Cc. of diluted sulphuric acid and evaporate the solution over a flame until vapors of sulphuric acid begin to evolve. The residue so obtained should not respond to the test for arsenic. Added tests: Heat about 0.5 Gm. of Methylthionine Hydrochloride at a temperature below a red heat until it is completely carbonized, then boil the powdered residue with 10 Cc. of diluted hydrochloric acid for 5 minutes, filter the liquid and wash the residue with 10 Cc. of distilled water. The combined liquids, when boiled with 1 Cc. of nitric acid and supersaturated with ammonia water and filtered, if necessary, should remain clear and colorless upon the addition of an equal volume of hydrogen sulphide T. S. (zinc, etc.) A solution of about 1 Gm. in 50 Cc. of boiling alcohol should leave not more than 1 percent. of residue, after washing on a filter with 50 Cc. of boiling alcohol and drying at 100° C. (dextrin, etc.)

Morphina.—Ash: changed from "no residue on ignition" to "not exceeding 0.1 percent." Added test: Dissolve 1 Gm. of Morphine in 10 Cc. of sodium hydroxide T. S., shake out the solution with three successive portions of 15, 10 and 10 Cc. of chloroform, and pass the chloroform extract through a small filter previously moistened with chloroform. Evaporate the combined chloroform extracts to dryness, dissolve the residue in 10 Cc. of fiftieth-normal sulphuric acid V. S., then add a few drops of cochineal T. S. and titrate the excess of acid with fiftieth-normal potassium hydroxide V. S. Not less than 7.5 Cc. of the latter should be required (limit of foreign alkaloids). Tests with potassium iodate, mercuric potassium iodide and potassium dichromate omitted.

Morphinae Hydrochloridum.—Modified apomorphine test: On adding potassium carbonate T. S. to a solution of the salt (1 in 30), a white precipitate is produced which should not become greenish on exposure to air nor yield a color to chloroform when shaken with it. Test for foreign alkaloids added.

Morphinae Sulphas.—Test for foreign alkaloids added.

Oleum Amygdalae Expressum.—Iodine value: changed from "95 to 100" to "from 93 to 100."

Oleum Gossypii Seminis.—Nitric acid and Becchi's silver nitrate tests omitted.

Saponification value changed from "191 to 196" to "from 190 to 198." Iodine value changed from "102 to 108" to "from 104 to 111."

Oleum Lini.—Test for mineral and rosin oils by saponification and solution of the soap omitted.

Oleum Morrhuac.—Test with a glass rod moistened with sulphuric acid omitted. Saponification value changed from "175 to 185" to "from 180 to 190." Iodine value changed from "140 to 150" to "from 140 to 180."

Oleum Olivac.—Omit from cotton seed oil test "after standing for 6 hours should change into a yellowish solid mass and an almost colorless liquid." Becchi's silver nitrate test for cotton seed oil omitted. Saponification value changed from "191 to 195" to "from 190 to 195." Iodine value changed from "80 to 88" to "from 79 to 90."

Oleum Ricini.—Iodine value changed from "84 to 88" to "from 83 to 88."

Oleum Theobromatis.—No change.

Oleum Tigllii.—Saponification value changed from "203 to 215" to "from 206 to 215." Iodine value changed from "103 to 109" to "from 104 to 110."

Oxygenium Compressum.—Rubric requires 95 percent. by volume of O. Passing 2000 Cc. of the gas through 100 Cc. of $\text{Ba}(\text{OH})_2$ T. S. at a given rate and under normal atmospheric pressure should produce not more than an opalescent turbidity (carbon dioxide). No opalescence should be produced by 1 Cc. of AgNO_3 T. S. in 100 Cc. of distilled water through which 2000 Cc. of the gas has been passed (halogens). On coloring 100 Cc. of distilled water with litmus the color should not be changed by passing through it 2000 Cc. of the gas (acids or bases). Assay: by absorption in alkaline pyrogallate T. S.

Pancreatinum.—Assay: Shake 10 Gm. or more of powdered potato starch with about 10 times its weight of cold distilled water and after draining on a filter, wash it with the same quantity of distilled water. Place the washed starch at once in an air-bath and maintain a temperature of about 50°C ., until the starch is sensibly dry. Reduce it to a fine powder and place it in a well-stoppered bottle. Determine the percentage of water still remaining in the starch by drying about 0.5 Gm. of it in an air-bath gradually raising the temperature to 120°C . and maintaining it at that temperature for 4 hours. Of the washed and partially dried starch mix a quantity equivalent to 7.5 Gm. of dry starch in a 400 Cc. beaker with 10 Cc. of cold distilled water, add 190 Cc. of boiling distilled water and heat the mixture on a water-bath, with constant stirring, for two minutes or until a translucent, uniform paste is obtained. Cool the paste to 40°C . in a water-bath previously adjusted to this temperature and add a solution of 0.3 Gm. of Pancreatin in 10 Cc. of distilled water, just previously made at 40°C . Mix well and maintain the same temperature for exactly 5 minutes, when a thin, nearly clear liquid should be produced. At once add 0.1 Cc. of this liquid to a previously made mixture of 0.2 Cc. of tenth-normal iodine V. S. and 60 Cc. of distilled water. No blue or reddish color should be produced.

Paraffinum.—Specific gravity changed from "0.890 to 0.905" to "about 0.900." Melting point changed from " 51.6° to 57.2°C ." to "from 50° to 57°C ." Added test: After shaking melted paraffin with an equal volume of hot alcohol, the alcohol should not show an acid reaction with moistened litmus paper (acids).

Paraldehydum.—Boiling point changed from " 121° to 125°C ." to "from 120°

to 125° C." Congealing point changed from "near 0 C." to "not below 6 C." Residue on evaporation not exceeding 0.05 percent.

Pelletierinae Tannas.—Statement that soluble lead, mercury and zinc salts are precipitated by Pelletierine Tannate and that it reduces silver and gold salts omitted. Ash changed from "no residue on ignition" to non-weighable. Added test: Weigh accurately about 0.5 Gm. of Pelletierine Tannate, dissolve it in 5 Cc. of potassium hydroxide T. S., and shake the solution in a separator with 10 Cc. of chloroform, then with two or more successive portions of 5 Cc. each of chloroform. Acidulate the chloroformic extract with 0.1 Cc. of hydrochloric acid, evaporate it to apparent dryness, then dissolve the residue in 5 Cc. of alcohol; again evaporate and dry for 1 hour at 60° C. The weight of residue so obtained should correspond to not less than 20 percent. of the weight taken. The residue obtained in the preceding test should respond to the following tests of identity and purity: On stirring about 0.001 Gm. of the residue on a white porcelain surface with 2 drops of sulphuric acid containing a trace of selenous acid and warming the mixture, a light bluish-green color will be produced which gradually changes to dark green and develops a pink border. On stirring about 0.001 Gm. of the residue on a white porcelain surface with 2 drops of sulphuric acid or nitric acid, no color other than a light yellow should be produced.

Pepsinum.—Assay: Mix 25 Cc. of normal hydrochloric acid V. S. with 275 Cc. of distilled water and dissolve in this liquid 0.2 Gm. of Pepsin. Immerse a hen's egg, which should be not less than five nor more than twelve days old, in boiling water during 15 minutes. As soon as the egg has sufficiently cooled to handle it, remove the pellicle and all of the yolk; at once rub the albumin through a No. 40 silk or hair sieve, rejecting the first portion that passes through the sieve, and place 10 Gm. of the succeeding portion in a wide-mouthed bottle of 100 Cc. capacity. Immediately add 2 Cc. of the acid liquid and with the aid of a rubber-tipped glass rod moisten the albumin uniformly. Again add 2 Cc. of the acid liquid, repeating the manipulation with the glass rod, and with gradually increasing portions of the acid liquid, until 20 Cc. has been added in all. Thoroughly separate the particles of albumin from each other, then rinse the rod with 15 Cc. more of the acid liquid, and after warming the mixture to 52° C., add exactly 5 Cc. of the solution of Pepsin. At once cork the bottle securely, invert it three times, and place it in a water-bath that has previously been regulated to maintain a temperature of 52° C. Keep it at this temperature for two and one-half hours, agitating the contents every 10 minutes by inverting the bottle once. Then remove it from the water-bath, pour the contents into a conical glass graduated measure having a diameter not exceeding 1 cm. at the bottom, and transfer the undigested egg albumin which adheres to the sides of the bottle to the measure with the aid of small portions (about 15 Cc. at a time) of distilled water, until 50 Cc. has been used. Stir the mixture well and let it stand for half an hour. The deposit of undissolved albumin should not then measure more than 2 Cc.

Petrolatum.—Specific gravity: changed from "0.820 to 0.850" to "about 0.820 to 0.865 at 60° C." Melting point changed from "45° to 48° C." to "from 38° to 54° C." Ash not exceeding 0.05 percent.

Petrolatum Album.—Petrolatum decolorized or nearly so by filtration through bone-black. White or faintly yellowish colored.

Petrolatum Liquidum.—A transparent liquid, free from fluorescence, without odor or taste, and giving off when heated not more than a faint odor of petroleum. Specific gravity changed from "0.870 to 0.940" to "from 0.845 to 0.940."

Phenol.—Rubric changed from not less than 96 percent. to 97 percent. by weight. Added test: An aqueous solution of Phenol (1 in 15) should be clear and neutral or not more than faintly acid to litmus. Boiling point changed from "178° to 182° C." to "about 182° C." Congealing point changed from "not lower than 39° C." to "not below 38.5° C." Test for creosote and cresol omitted. Residue: when volatilized changed from "no residue" to "not exceeding 0.02 percent."

Phenol Liquefactum.—Modified boiling point statement: "boiling point should not rise above 182° C." In other respects Liquefied Phenol (without the separation of the water, as formerly required) should respond to the tests for identity and purity given under Phenol, omitting the congealing point.

Phenolphthaleinum.—Melting point: about 153° to 158° C. It dissolves in solutions of the alkali hydroxides and carbonates with a red color, varying in shade and intensity with the concentration. The solutions are decolorized by the addition of acids in excess or by heating with zinc dust. Ash: not exceeding 0.05 percent. A solution of 0.5 Gm. of Phenolphthalein in 30 Cc. of alcohol should be colorless (resinous substances). One-half Gm. should dissolve completely in a mixture of 4 Cc. of sodium hydroxide T. S. and 50 Cc. of distilled water (fluorane). A mixture of 250 Cc. of cold recently boiled distilled water and 0.5 Cc. of a solution of Phenolphthalein (1 in 100) in diluted alcohol should not require more than 0.05 Cc. of tenth-normal sodium hydroxide V. S. to produce a pink coloration (various organic impurities). Heat about 1 Gm. of Phenolphthalein on a water-bath for 5 minutes with 20 Cc. of diluted hydrochloric acid, filter the liquid and evaporate the filtrate to dryness. The residue when dissolved in 20 Cc. of distilled water, slightly acidulated with hydrochloric acid, should not respond to time-limit test for heavy metals, the addition of ammonia water being omitted. Heat a crucible to redness and introduce in small portions a mixture of 0.5 Gm. of Phenolphthalein, about 1 Gm. of potassium nitrate; and about 0.5 Gm. of anhydrous sodium carbonate. Maintain a red heat until the reaction ceases, then boil the cooled residue for 5 minutes with 15 Cc. of diluted sulphuric acid, filter, and wash the undissolved residue with 10 Cc. of distilled water. Evaporate the filtrate and washings until sulphuric acid vapors begin to be evolved, then the residue dissolved in 5 Cc. of distilled water should not respond to the test for arsenic.

Phenylis Salicylas.—Melting point changed from 42° C. to "from 41° to 43° C."

Phosphorus.—No change.

Physostigminae Salicylas.—Reaction statement changed from "acid" to "neutral or not more than faintly acid." Identification tests with potassium hydroxide, platonic chloride, formaldehyde, and sugar omitted. Ash changed from "no

residue on incineration" to non-weighable. Added tests: Precipitate the salicylic acid from a cold saturated aqueous solution of the salt with a slight excess of hydrochloric acid, and filter the mixture. The filtrate should not be rendered turbid at once by the addition of barium chloride T. S. (sulphate). A solution of about 0.1 Gm. of Physostigmine Salicylate in 2 Cc. of sulphuric acid should not become darker than yellow within 5 minutes (readily carbonized impurities).

Pilocarpinac Hydrochloridum.—Melting point: after drying to constant weight at 100° C. changed from 195.9° C. to "about 195° to 198° C." Sulphuric acid, potassium dichromate and calomel tests omitted. Ash: changed from "entirely consumed on ignition" to non-weighable. Solution in sulphuric acid changed from "colorless" to "should be colorless or not more than faintly yellowish." Added test: The addition of ammonia water or of potassium dichromate T. S. to an aqueous solution of the salt (1 in 100) should produce no turbidity (various foreign alkaloids).

Pilocarpinac Nitras.—Melting point changed from 170.9° C. to "from 170° to 173° C." Test with calomel replaced by the following: The addition of silver nitrate T. S. to an aqueous solution of the salt (1 in 20) acidulated with nitric acid should produce not more than an opalescence (chloride).

Pix Liquida.—No change.

Plumbi Acetas.—Rubric changed from "not less than 99.5 percent. of pure Lead Acetate" to "not less than 85.31 nor more than 89.57 percent. by weight of anhydrous $Pb(C_2H_3O_2)_2$." Assay: Weigh accurately about 5 Gm. of Lead Acetate and dissolve it in sufficient recently boiled distilled water to make exactly 100 Cc. of solution. Mix 10 Cc. of this solution with 50 Cc. of tenth-normal oxalic acid V. S. in a 200 Cc. measuring flask, agitate the mixture thoroughly for five minutes, then fill the flask to the mark with distilled water and filter. The subsequent titration of 100 Cc. of the filtrate (representing 1/20 of the amount of Lead Acetate originally taken) with tenth-normal potassium permanganate V. S., the filtrate being previously acidulated with 10 Cc. of sulphuric acid and warmed to 80° C., should indicate not less than 85.31 percent. of anhydrous Lead Acetate.

Plumbi Oxidum.—Rubric changed from "not less than 96 percent." to "not less than 93 percent. by weight." Assay as under *Plumbi Acetas*.

Potassa Sulphurata.—Rubric given requiring polysulphides, etc., corresponding to not less than 12.85 percent. by weight of sulphur. Description and identity tests given. Assay as under *Calx Sulphurata*.

Potassii Acetas.—Rubric changed from "not less than 98 percent" to "not less than 99 percent. by weight when thoroughly dried." Moisture limit 5 percent. with method for estimation. Assay requires solution of carbonized residue in $N/2 H_2SO_4$ V. S. and estimated by residual titration with $N/2 KOH$ V. S.

Potassii Bicarbonas.—No change.

Potassii Bitartras.—Rubric changed from "not less than 99 percent." to "not less than 99.5 percent. by weight. Method of assay changed from ignition and titration to direct titration of dissolved salt with $N/1 KOH$ V. S.

Potassii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent. by weight. Moisture limit 2 percent. with method for esti-

nation. Assay changed from direct titration with N/10 AgNO_3 V. S. to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S. in excess.

Potassii Carbonas.—Rubric changed from “not less than 98 percent.” to “not less than 99 percent. by weight.” Moisture limit 5 percent. with method for estimation.

Potassii Citras.—Assay changed as under *Potassii Acetas*.

Potassii Dichromas.—Rubric changed from “not less than 99 percent.” to “not less than 99.5 percent. by weight.” Assay: Weigh accurately about 1 Gm. of Potassium Dichromate, dissolve it in distilled water to make a volume of 100 Cc., mix 20 Cc. of this solution with 3 Cc. of hydrochloric acid and about 2 Gm. of potassium iodide in a 250 Cc. glass-stoppered flask, and agitate the mixture; when it has stood five minutes dilute it with 100 Cc. of distilled water and titrate with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator. It should show not less than 99 percent. of potassium dichromate when calculated to the amount originally taken.

Potassii et Sodii Tartras.—Rubric changed from “not less than 99 percent. of pure Potassium and Sodium Tartrate” to “not less than 73.71 nor more than 77.39 percent. by weight of anhydrous $\text{KNaC}_4\text{H}_4\text{O}_6$.” Assay as under *Potassii Acetas*.

Potassii Ferrocyanidum.—Rubric changed from “not less than 99 percent.” to not less than 86.33 percent. nor more than 90.64 percent. by weight of anhydrous $\text{K}_4\text{Fe}(\text{CN})_6$. Assay: Weigh accurately about 2 Gm. of Potassium Ferrocyanide, dissolve it in 250 Cc. of distilled water, acidulate the solution with 25 Cc. of sulphuric acid and titrate with tenth-normal potassium permanganate V. S. It should show not less than 86.33 percent. of anhydrous Potassium Ferrocyanide.

Potassii Hydroxidum.—Assay: Weigh accurately about 10 Gm. of Potassium Hydroxide, in a glass-stoppered weighing-bottle, dissolve it in 250 Cc. of distilled water, which has been previously boiled and cooled, in a 500 Cc. graduated flask, and add 30 Cc. of barium chloride T. S. Now fill the flask to the mark with distilled water, which has been previously boiled and cooled, and thoroughly agitate the liquid. Then pass the liquid in the flask through a dry filter (rejecting the first 20 Cc.), then titrate 100 Cc. of the clear filtrate with normal hydrochloric acid V. S., using phenolphthalein T. S. as indicator. It should show not less than 85 percent. of Potassium Hydroxide when calculated to the amount originally taken.

Potassii Hypophosphis.—Assay as under *Calcii Hypophosphis*.

Potassii Iodidum.—Assay changed from direct titration with N/10 AgNO_3 V. S. to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S. in excess.

Potassii Nitras.—Assay: Weigh accurately about 0.4 Gm. of Potassium Nitrate, dissolve it in 10 Cc. of hydrochloric acid in a small glass dish, and evaporate the solution to dryness on a water-bath. Dissolve the residue in 10 Cc. of hydrochloric acid and again evaporate it to dryness on a water-bath. Transfer the residue with the aid of distilled water to a flask, add 50 Cc. of tenth-normal silver nitrate V. S., agitate well, add 2 Cc. of nitric acid and 2 Cc. of ferric ammonium sulphate T. S., and titrate the excess of silver nitrate V. S. with tenth-normal

potassium sulphocyanate V. S. It should indicate not less than 99 percent. of potassium nitrate.

Potassii Permanganas.—No change.

Pyrogallol.—Melting point changed from 132° C. to "from 128° to 132° C." Ash: changed from "no residue on ignition" to "not exceeding 0.1 percent." Requirements for a freshly prepared aqueous solution changed from "colorless" to "colorless or not more than slightly yellowish," and from "neutral" to "neutral or not more than slightly acid."

Pyroxylinum.—Ash: changed from non-weighable to "not exceeding 0.3 percent." Added test: On stirring 1 Gm. of Pyroxylin with 20 Cc. of distilled water, the latter should not acquire an acid reaction, and on evaporating 10 Cc. of the filtered liquid to dryness on a water-bath, not more than 0.0015 Gm. of residue should be left (soluble impurities).

Quinina.—Melting point omitted. Added test: Solutions of Quinine in diluted sulphuric acid show a vivid blue fluorescence. Modified thalleioquin test: On adding 2 or 3 drops of bromine T. S. to 1 Cc. of an aqueous solution of Quinine (1 in 100) made with the aid of just sufficient diluted sulphuric acid to effect solution, and then introducing 1 Cc. of ammonia water, the liquid will acquire an emerald-green color. The iodo-sulphate and the copper sulphate-hydrogen dioxide tests omitted. Loss on drying at 125° C. changed from "not exceeding 14.3 percent." to "not exceeding 15 percent." Added test: Ash not exceeding 0.1 percent. Modified test for other cinchona alkaloids: Dissolve 1.74 Gm. of Quinine in 20 Cc. of alcohol, dilute the solution with 50 Cc. of hot distilled water and neutralize it with normal sulphuric acid V. S., using litmus T. S. as indicator. Evaporate the liquid to dryness on a water-bath, powder the residue, mix it in a test-tube with 20 Cc. of distilled water and complete the test as under *Quininae Sulphas*. (8th Rev.).

Quininae Bisulphas.—Melting point omitted. Loss on drying at 100° C. not exceeding 25 percent. Ash changed from "no residue on ignition" to "not exceeding 0.05 percent." Modified test for other cinchona alkaloids: Dissolve 2.52 Gm. of Quinine Bisulphate in 50 Cc. of hot distilled water and neutralize the solution with normal sodium hydroxide V. S., using litmus T. S. as indicator. Evaporate the solution to dryness on a water-bath, powder the residue, mix it in a test-tube with 20 Cc. of distilled water and complete the test as under *Quininae Sulphas*. (8th Rev.).

Quininae et Ureae Hydrochloridum.—Rubric requires not less than 58 percent. of anhydrous quinine. An aqueous solution is strongly acid. Silver nitrate T. S. produces in an aqueous solution a white precipitate insoluble in nitric acid. Add 2 Cc. of colorless nitric acid to a cold solution of about 1 Gm. of the salt in 2 Cc. of distilled water and cool the mixture at once in iced water. Crystalline leaflets of urea nitrate will be formed on standing. Collect the crystals in a funnel upon glass-wool, wash them with about 5 Cc. of a cold mixture of equal volumes of nitric acid and distilled water, and, after draining them, dissolve the crystals in a few Cc. of distilled water. The addition of a few drops of solution of mercuric nitrate to the urea nitrate solution, then the addition of sodium hydroxide T. S. to only a slightly acid reaction, will produce a white precipi-

tate. The quinine obtained by precipitating an aqueous solution of the salt (1 in 20) with sodium hydroxide T. S., washing it on a filter with cold water until the washings give only a faint opalescence with silver nitrate T. S., and then drying it at a moderate temperature, should respond to the tests for identity and purity given under Quinina. Ash: not exceeding 0.05 percent. A solution of about 0.1 Gm. of the salt in 2 Cc. of sulphuric acid should not be darker in color than light yellow (readily carbonizable matter). On warming 10 Cc. of an aqueous solution of the salt (1 in 20) with 5 Cc. of sodium hydroxide T. S. to 50° C., no alkaline vapors should be evolved at once (ammonium compounds). Assay: Weigh accurately about 0.5 Gm. of Quinine and Urea Hydrochloride, dissolve it in 5 Cc. of distilled water in a separator, then add 5 Cc. of potassium hydroxide T. S., and shake the mixture with 10 Cc. of ether, then with two or more successive portions of 5 Cc. of ether to completely extract the quinine. Upon evaporation of the combined ether extracts and drying to a constant weight at 100° C., the residue of anhydrous quinine should correspond to not less than 58 percent. of the weight of the salt taken.

Quininae Hydrobromidum.—Melting point omitted. Test with ammonia water omitted. Loss on drying at 100° C. changed from "not exceeding 4.25 percent." to "not exceeding 5 percent." Ash: changed from "no residue on ignition" to "not exceeding 0.05 percent." Added test: The addition of a few drops of diluted sulphuric acid to 10 Cc. of a hot aqueous solution of the salt (1 in 20) should produce no turbidity (barium). Potassium ferricyanide test omitted. Modified test for other cinchona alkaloids: Dissolve 2.93 Gm. of Quinine Hydrobromide in 20 Cc. of distilled water at 65° C. in a test-tube of about 80 Cc. capacity, add a solution of 1.5 Gm. of crystallized sodium sulphate in 10 Cc. of distilled water warmed to 65° C. and maintain the mixture at this temperature for half an hour, shaking it frequently and thoroughly in the stoppered tube. Then cool it to 15° C. and keep it at this temperature for two hours, shaking it occasionally. Now filter the liquid through filter paper of 8 to 10 cm. diameter and complete the test with 5 Cc. of the filtrate as under Quininae Sulphas. (8th Rev.).

Quininae Hydrochloridum.—Melting point omitted. Loss on drying changed from not less than 9.1 percent." to "not exceeding 10 percent." Ash changed from "no residue on ignition" to "not exceeding 0.05 percent." Requirement for solution in sulphuric acid changed from "colorless" to "not darker than light yellow (organic impurities)." Added test: This solution should not be colored red by the addition of a few drops of nitric acid (difference from morphine). Potassium ferricyanide test omitted. Added tests: The addition of a few drops of diluted sulphuric acid to 10 Cc. of an aqueous solution of the salt (1 in 20) should produce no turbidity (barium). Modified test for other cinchona alkaloids: Dissolve 2.75 Gm. of Quinine Hydrochloride in 20 Cc. of distilled water at 65° C. in a test-tube of about 80 Cc. capacity, add a solution of 1.5 Gm. of crystallized sodium sulphate in 10 Cc. of distilled water warmed to 65° C. and maintain the mixture at this temperature for half an hour, shaking it frequently and thoroughly in the stoppered tube. Then cool it to 15° C. and keep it at this

temperature for 2 hours, shaking it occasionally. Now filter the liquid through filter paper of from 8 to 10 cm. diameter and complete the test with 5 Cc. of the filtrate as directed under *Quininae Sulphas*. (8th Rev.).

Quininae Salicylas.—Melting point omitted. Formaldehyde test omitted. Modified thalleioquin test: On adding 1 or 2 drops of bromine T. S. to 10 Cc. of a dilute aqueous solution of Quinine Salicylate and then introducing an excess of ammonia water, an emerald-green color will be produced. Formula changed from one to two molecules of water of crystallization, hence loss on drying changed from "not more than 2 percent." to "not exceeding 5 percent." Ash: changed from "no residue on ignition" to "not exceeding 0.05 percent." Added test: On shaking about 0.4 Gm. of the salt with 20 Cc. of distilled water and 1 Cc. of nitric acid, separate portions of the filtered solution should not be rendered more than slightly opalescent by the addition of barium chloride T. S. (sulphate) or silver nitrate T. S. (chloride). Modified test for other cinchona alkaloids: Mix 2.21 Gm. of Quinine Salicylate in a separator with 10 Cc. of distilled water, add 5 Cc. of ammonia water, and shake the liquid with three successive portions of 25 Cc., 20 Cc. and 10 Cc. of ether. Evaporate the combined ether solutions to dryness on a water-bath, dissolve the residue in 20 Cc. of alcohol, dilute with 50 Cc. of hot distilled water, and neutralize the liquid with normal sulphuric acid V. S., using litmus T. S. as indicator. Evaporate it to dryness on a water-bath, powder the residue, mix it with 20 Cc. of distilled water in a test-tube, and complete the test as under *Quininae Sulphas*. (8th Rev.).

Quininae Sulphas.—Melting point omitted. Temperature for driving off water of crystallization changed from 115° C. to 110° C. Ash: changed from "no residue on ignition" to "not exceeding 0.05 percent."

Quininae Tannas.—Heated in a glass tube the salt melts, forming a purplish colored, tarry mass. Aqueous and alcoholic solutions of the salt are colored blue-black by ferric chloride T. S. Loss on drying not exceeding 10 percent. Ash not exceeding 0.3 percent. Shake about 0.5 Gm. of the salt with a mixture of 50 Cc. of distilled water and 1 Cc. of nitric acid and filter the mixture. Ten Cc. of this filtrate should not become colored on the addition of 1 Cc. of hydrogen sulphide T. S.; other 10 Cc. portions of the filtrate should not become more than slightly turbid on the addition of 1 Cc. of silver nitrate T. S. (chlorides) or barium chloride T. S. (sulphates). Weigh accurately about 2 Gm. of Quinine Tannate, shake it with three successive portions of 25 Cc. each of anhydrous ether, filter, and wash the filter with 10 Cc. of anhydrous ether. Upon the evaporation of the combined filtrates and washing and drying at 100° C., the yield of residue should not exceed 0.25 percent. (uncombined quinine). Weigh accurately about 0.5 Gm. of Quinine Tannate, mix it in a separator with 10 Cc. of distilled water and 10 Cc. of ammonia water, and shake the mixture with 20 Cc. of ether, then with successive 10 Cc. portions of ether until the quinine is completely extracted. Upon the evaporation of the combined ethereal liquids and drying the residue to a constant weight at 100° C., the weight of the anhydrous quinine should correspond to not less than 30 percent. nor more than 35 percent. of the weight of the salt taken. The alkaloid separated from a larger

quantity of the salt, in the manner directed above, should respond to the identity tests, and 1.49 Gm. of the anhydrous alkaloid should conform to the requirements regarding other cinchona alkaloids given under Quinina.

Resorcinol.—Rubric added requiring "not less than 99.5 percent. by weight." Boiling point and tartaric acid test omitted. Ash: changed from "completely volatilized at higher temperature than 111° C." to "not exceeding 0.05 percent." Assay: Dissolve about 1.5 Gm. of Resorcinol, accurately weighed, in a sufficient quantity of distilled water to make 500 Cc. Transfer 25 Cc. of the solution to a 500 Cc. glass-stoppered flask having a long and narrow neck, add 50 Cc. of tenth-normal bromine V. S., and dilute with 50 Cc. of distilled water. Then add 5 Cc. of hydrochloric acid and at once stopper the flask. Shake the liquid and allow it to stand for one minute, then dilute it with 20 Cc. of distilled water, add 5 Cc. of potassium iodide T. S. and allow it to stand for five minutes. The titration of the liberated iodine with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator, should show not less than 99.5 percent. of pure resorcinol.

Saccharum.—Added test: Ash not exceeding 0.05 percent. An aqueous solution of Sugar (2 in 1) should be colorless when viewed horizontally through a vertical cylinder of colorless glass having an inside diameter of about 25 mm. An aqueous solution of Sugar (1 in 10) should give no precipitate with hydrogen sulphide T. S., and not more than a faint opalescence with ammonium oxalate T. S., barium nitrate T. S. and silver nitrate T. S. (soluble metallic salts). Dissolve 20 Gm. of Sugar in enough distilled water to make 100 Cc. and filter the solution. To 50 Cc. of the filtered liquid, contained in a 250 Cc. beaker, add 50 Cc. of alkaline cupric tartrate V. S., heat the mixture at such a rate that approximately 4 minutes are required to bring it to the boiling point and then boil it for exactly two minutes. Add 100 Cc. of cold recently boiled distilled water and collect and weigh the precipitated cuprous oxide in the following manner: Prepare a Gooch crucible with an asbestos layer. Thoroughly wash the asbestos with distilled water, followed successively by 10 Cc. of alcohol and 10 Cc. of ether; dry it at 100° C., continuing the heat for 30 minutes, and then weigh the prepared crucible. Collect the precipitated cuprous oxide on the asbestos, thoroughly wash it with hot distilled water, then with 10 Cc. of alcohol, and finally with 10 Cc. of ether and dry it at 100° C., continuing the heat for 30 minutes. The weight of the cuprous oxide should not exceed 0.138 Gm., corresponding to not more than 0.5 percent. of invert sugar.

Saccharum Lactis.—Added test: A hot aqueous solution of Sugar of Milk (1 in 2) should be clear, colorless or at most faintly yellowish in color and odorless. Add 20 Cc. of alcohol (70 percent. by volume) to 2 Gm. of Sugar of Milk, in fine powder, shake the mixture frequently during half an hour at 15° C. and then filter it. Ten Cc. of the filtrate should remain clear after admixture with an equal volume of absolute alcohol (dextrin) and this liquid upon evaporation on a water-bath should leave not more than 0.03 Gm. of residue (cane sugar, glucose).

Safrolum.—An alcoholic solution should be neutral. Specific gravity changed from "1.008 to 1.100" to "from 1.097 to 1.100." Boiling point changed from

"about 233° C." to "about 232° to 236° C." Added test: Safrol produces an intensely red color with sulphuric acid.

Salicinum.—Melting point changed from 201.4° C. to "from 198° to 202° C." Molybdic acid, potassium iodate, formaldehyde, and nitric acid-potassium cyanide tests omitted. Ash: changed from "no residue on ignition" to "not exceeding 0.05 percent." Added test: An aqueous solution of Salicin (1 in 50) should not be colored by ferric chloride T. S. (salicylic acid). A saturated aqueous solution of Salicin slightly acidulated with hydrochloric acid should not respond to the time-limit test for heavy metals.

Santoninum.—Melting point changed from 170.3° C. to "from 170° to 172° C." Ash: changed from "no residue on ignition" to "not exceeding 0.1 percent."

Sapo.—Modified tests: A solution of a quantity of Soap corresponding to 0.64 Gm. of dried Soap in 25 Cc. of hot alcohol should not gelatinize on cooling to 20° C. (soap from animal fats). Dissolve about 10 Gm. of Soap, accurately weighed, in 100 Cc. of alcohol, with the aid of heat, transfer the undissolved residue, if any, to a tared filter which has been dried at 100° C. and wash it thoroughly with boiling alcohol. Its weight after drying at 100° C. should not exceed 1 percent. of the weight of dry Soap in the original weight taken (sodium chloride, carbonate, etc). The weight of this residue thoroughly washed with distilled water and dried at 100° C. should not exceed 0.15 percent. of the weight of dry Soap in the original weight taken (silica and other accidental impurities). The alcoholic filtrate from the preceding test should not show an alkaline reaction with phenolphthalein T. S. (sodium hydroxide).

Sodii Acetas.—Rubric changed from "in an uneffloresced condition, not less than 99.5 percent. of pure Sodium-Acetate" to "not less than 99.97 nor more than 99.99 percent. by weight of anhydrous $\text{NaC}_2\text{H}_3\text{O}_2$." Assay as under Potassii Acetas.

Sodii Arsenas.—Rubric changed from "in an uneffloresced condition not less than 98 percent. of pure Di-sodium-ortho-arsenate" to "not less than 98.98 nor more than 99.92 percent. by weight of anhydrous Na_2HAsO_4 ." Assay: Weigh accurately about 0.5 Gm. of Sodium Arsenate, dissolve it in 25 Cc. of distilled water, heat the solution to 80° C. and add 10 Cc. of hydrochloric acid, and 3 Gm. of potassium iodide. Allow the mixture to stand for 15 minutes at 80° C., then cool it and titrate with tenth-normal sodium thiosulphate V. S., starch T. S. being used as indicator. It should show not less than 98.98 percent. of anhydrous sodium arsenate.

Sodii Arsenas Exsiccatus.—Moisture limit 3 percent. with method for estimation. Assay as under Sodii Arsenas.

Sodii Benzoas.—Assay changed as under Potassii Acetas.

Sodii Benzoesulphimidum.—An aqueous solution should be neutral or only slightly alkaline to litmus, but should not produce a color with phenolphthalein T. S. On incineration the salt leaves a residue of sodium sulphate. On mixing 10 Cc. of an aqueous solution of the salt (1 in 10) with 1 Cc. of hydrochloric acid, a crystalline precipitate will be produced which after washing with cold distilled water until the washings are free from chloride and then drying, has the characteristics given under Benzoesulphimidum. The addition of ferric chlor-

ide T. S. to 10 Cc. of an aqueous solution of the salt (1 in 20) previously acidulated with 3 to 5 drops of acetic acid should not produce a flesh-colored or violet-colored precipitate (benzoate or salicylate). In other respects it should respond to the tests of identity and purity given under Benzosulphinidum.

Sodii Bicarbonas.—No change.

Sodii Boras.—Rubric changed from "in the uneffloresced condition not less than 99 percent." to "not less than 52.32 nor more than 54.92 percent. by weight of anhydrous $\text{Na}_2\text{B}_4\text{O}_7$." Assay: Weigh accurately about 5 Gm. of Sodium Borate, dissolve it in 100 Cc. of distilled water and titrate the solution with normal hydrochloric acid V. S., methyl-orange T. S. being used as indicator. It should show not less than 52.32 percent. of anhydrous sodium borate.

Sodii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent. by weight when dried." Assay changed from direct titration with N/10 AgNO_3 V. S. to residual titration with N/10 KCNS V. S. after the addition of N/10 AgNO_3 V. S. in excess.

Sodii Cacodylas.—Rubric given requiring from 70 to 75 percent. by weight of anhydrous sodium cacodylate. The salt imparts an intensely yellow color to a non-luminous flame. A mixture of a few drops of an aqueous solution of the salt (1 in 100) with 2 Cc. of hypophosphorous acid allowed to stand in a stoppered tube will develop the odor of cacodyl within 1 hour. An aqueous solution of the salt shows a slightly acid or a slightly alkaline reaction with litmus. A solution of 2 Gm. of Sodium Cacodylate in 50 Cc. of distilled water should not require more than 0.5 Cc. of tenth-normal acid or alkali V. S. to render it neutral to phenolphthalein T. S. No turbidity should be produced in 10 Cc. of an aqueous solution of the salt (1 in 20) by 1 Cc. of calcium chloride T. S., either in the cold or on heating (monomethylarsenate). No turbidity should be produced in 5 Cc. of the solution by 2 Cc. of magnesia mixture T. S. within 1 hour (arsenate or phosphate). Another portion of the solution should not respond to the Time-Limit Test for heavy metals, including arsenites. An aqueous solution acidulated with nitric acid should not be rendered turbid at once by silver nitrate T. S. (chloride) or barium chloride T. S. (sulphate). Assay: Weigh accurately from 2 to 3 Gm. of Sodium Cacodylate, dissolve it in distilled water, render the solution neutral to phenolphthalein T. S., if necessary, and then titrate with normal hydrochloric acid V. S., using methyl-orange T. S. as indicator. It should show not less than 70 nor more than 75 percent. of anhydrous sodium cacodylate.

Sodii Carbonas Monohydratus.—No change.

Sodii Chloras.—Rubric changed from "not less than 99 percent." to "99.5 percent. by weight." Assay: Weigh accurately about 0.1 Gm. of Sodium Chlorate, transfer it to a 250 Cc. flask and dissolve it in 10 Cc. of distilled water. Then add 25 Cc. of acidulated ferrous sulphate T. S. to the solution, insert a valve stopper and boil the mixture for 10 minutes. Now cool the mixture, add 10 Cc. of a 10 percent. manganous sulphate solution and titrate the excess of ferrous sulphate with tenth-normal potassium permanganate V. S. At the same time conduct a parallel experiment with another portion of 25 Cc. of the acidulated

ferrous sulphate T. S. to ascertain the total amount of ferrous sulphate in the solution used. It should show not less than 99.5 percent. of sodium chlorate.

Sodii Chloridum.—Water limit 3 percent. with method for estimation. Assay changed from direct titration with $N/10$ AgNO_3 V. S. to residual titration with $N/10$ KCNS V. S. after the addition of $N/10$ AgNO_3 V. S. in excess.

Sodii Citras.—Rubric changed from "not less than 97 percent. of pure sodium citrate" to "not less than 35.76 nor more than 37.54 percent. of anhydrous sodium citrate." Assay changed as under *Potassii Acetas*.

Sodii Cyanidum.—Rubric given requiring not less than 95 percent. by weight of sodium cyanide. At a low red heat the salt fuses. An aqueous solution is strongly alkaline to litmus, and emits the odor of hydrocyanic acid. To a non-luminous flame the salt imparts an intensely yellow color. A few drops of a solution of the salt (1 in 20) yield with silver nitrate T. S. a white precipitate, which is soluble in an excess of the solution of Sodium Cyanide and in ammonia water. Shake 5 Cc. of a solution of the salt (1 in 20) with a few drops of ferrous sulphate T. S. and of ferric chloride T. S., and then add a slight excess of hydrochloric acid; a blue precipitate (Prussian blue) will be produced. In an aqueous solution of the salt (1 in 10) a drop of ferric chloride T. S. followed by 1 Cc. of diluted hydrochloric acid should produce neither a dark blue color (ferrocyanide) nor a red color (sulphocyanate). Assay: Weigh accurately about 0.45 Gm. of Sodium Cyanide, dissolve it in 25 Cc. of distilled water, add 4 Cc. of ammonia water and 3 drops of potassium iodide T. S. The titration with tenth-normal silver nitrate V. S. to the production of a permanent precipitate should show not less than 95 percent. of sodium cyanide.

Sodii Hydroxidum.—Assay changed as under *Potassii Hydroxidum*.

Sodii Hypophosphis.—Assay as under *Calcii Hypophosphis*.

Sodii Iodidum.—Rubric changed from "not less than 98 percent." to "not less than 99 percent. by weight." Moisture limit 3 percent. with method for estimation. Assay changed from direct titration with $N/10$ AgNO_3 V. S. to residual titration with $N/10$ KCNS V. S. after addition of $N/10$ AgNO_3 V. S. in excess.

Sodii Nitras.—Assay as under *Potassii Nitras*.

Sodii Nitris.—Rubric changed from "not less than 90 percent." to "not less than 95 percent. by weight." Assay: Weigh accurately about 1 Gm. of Sodium Nitrite, dissolve it in distilled water to make a volume of 100 Cc., then add to 10 Cc. of this solution, from a pipette, having its point dipping beneath the surface, a mixture of 50 Cc. of tenth-normal potassium permanganate V. S., 100 Cc. of distilled water and 5 Cc. of sulphuric acid. Warm the liquid to 40° C., allow it to stand for 5 minutes and then titrate with tenth-normal oxalic acid V. S. It should show not less than 95 percent. of sodium nitrite when calculated to the amount originally taken.

Sodii Perboras.—Rubric given requiring "not less than 9 percent. by weight of available oxygen." An aqueous solution of the salt shows an alkaline reaction with litmus and phenolphthalein T. S. In aqueous solution the salt is decomposed into metaborate and hydrogen peroxide; the solution gradually evolves oxygen, more rapidly on warming. The salt imparts an intensely yellow color to a non-luminous flame. Turmeric paper if moistened with an aqueous solution of the

salt which has been acidulated with hydrochloric acid becomes brown in color, particularly on drying; on moistening the dried test paper with ammonia water, the color is changed to greenish-black. Upon agitating a mixture of 1 Cc. of an aqueous solution of the salt (1 in 50), 1 Cc. of diluted sulphuric acid, a few drops of potassium dichromate T. S., and 2 Cc. of ether, the ether will become of a blue color. On strongly heating about 0.5 Gm. of the salt in a platinum crucible, it leaves about 44 percent. of residue. This residue, dissolved in 10 Cc. of distilled water and acidulated with hydrochloric acid, should not respond to the Time-Limit Test for heavy metals. A solution of 1 Gm. of the salt in 100 Cc. of distilled water should require from 6.4 to 6.5 Cc. of normal hydrochloric acid V. S. for neutralization, methyl-orange T. S. being used as indicator. Assay: Weigh accurately about 0.25 Gm. of the salt, dissolve it in a mixture of 50 Cc. of distilled water and 10 Cc. of diluted sulphuric acid and titrate the solution with tenth-normal potassium permanganate V. S. It should show not less than 9 percent. of available oxygen.

Sodii Phenolsulphonas.—Rubric changed from "not less than 99 percent. of pure Sodium Paraphenolsulphonate" to "not less than 83.64 nor more than 87.82 percent. by weight of anhydrous sodium phenolsulphonate." Assay: Dissolve about 0.25 Gm. of Sodium Phenolsulphonate, accurately weighed, in 50 Cc. of distilled water, add 50 Cc. of tenth-normal bromine V. S., and 5 Cc. of hydrochloric acid. Allow the mixture to stand for 15 minutes, then add 2 Gm. of potassium iodide dissolved in 5 Cc. of distilled water, and subject the solution to residual titration with tenth-normal sodium thiosulphate V. S., using starch T. S. as indicator. It should show not less than 83.64 percent. of anhydrous sodium paraphenolsulphonate.

Sodii Phosphas.—Rubric changed from "in an uneffloresced condition not less than 99 percent. of pure Di-sodium-ortho-phosphate" to "not less than 39.25 nor more than 41.21 percent. by weight of anhydrous Na_2HPO_4 ." Assay: Introduce about 0.4 Gm. of Sodium Phosphate, accurately weighed, into a 100 Cc. graduated flask, dissolve it in 10 Cc. of distilled water, add 50 Cc. of tenth-normal silver nitrate V. S. and agitate the mixture well. Then gradually add zinc oxide (free from chloride) in small portions until the liquid is neutral to litmus. Then add distilled water to make 100 Cc., agitate the mixture thoroughly, filter through a dry filter, collect 50 Cc. of the filtrate, add 2 Cc. of nitric acid and 2 Cc. of ferric ammonium sulphate T. S., and titrate with tenth-normal potassium sulphocyanate V. S. to the production of a permanent red color. When calculated to the amount of hydrated Sodium Phosphate originally taken, it should show not less than 39.25 percent. of anhydrous sodium phosphate.

Sodii Phosphas Exsiccatus.—Rubric changed from "not less than 99 percent. of pure anhydrous Sodium Phosphate" to "not less than 97.5 percent. by weight of anhydrous Na_2HPO_4 in dried product." Moisture limit 5 percent. with method for estimation. Assay as under *Sodii Phosphas*.

Sodii Salicylas.—Assay as under *Potassii Acetas*.

Sodii Sulphas.—Rubric changed from "in the uneffloresced condition not less than 99 percent. of pure Sodium Sulphate" to "not less than 43.64 nor more than 45.82 percent. by weight of anhydrous Na_2SO_4 ." Assay: Dissolve about 1 Gm.

of Sodium Sulphate, accurately weighed, in 100 Cc. of distilled water, acidulate the solution with hydrochloric acid and heat it to boiling. Gradually add an excess of barium chloride T. S., allow the mixture to stand for 30 minutes, collect the precipitate of barium sulphate on a filter, wash, dry, ignite, and weigh. It should correspond to not less than 43.64 percent. of anhydrous sodium sulphate.

Sodii Thiosulphas.—Rubric changed from "not less than 98 percent. of pure Sodium Thiosulphate" to "not less than 63.07 nor more than 66.22 percent. by weight of anhydrous $\text{Na}_2\text{S}_2\text{O}_3$."

Sparteinae Sulphas.—Reaction: aqueous solution changed from "acid" to "neutral or acid." Melting point, anhydrous salt: changed from 136°C . to "about 140°C ." Potassium ferrocyanide test omitted. Added tests: a mixture of about 0.1 Gm. of Sparteine Sulphate, 0.5 Cc. of chloroform, and 0.5 Cc. of alcoholic half-normal potassium hydroxide V. S. should not emit an odor of phenyl isocyanide on heating (aniline). Ash: not exceeding 0.1 percent.

Strontii Bromidum.—Rubric changed from "not less than 97 percent." to "not less than 98.5 percent. by weight." Assay changed from direct titration with $\text{N}/10\text{ AgNO}_3$ V. S. to residual titration with $\text{N}/10\text{ KCNS}$ V. S. after the addition of $\text{N}/10\text{ AgNO}_3$ V. S. in excess.

Strontii Iodidum.—Rubric changed from "not less than 98 percent." to "not less than 99 percent. by weight." Assay changed from direct titration with $\text{N}/10\text{ AgNO}_3$ V. S. to residual titration with $\text{N}/10\text{ KCNS}$ V. S. after the addition of $\text{N}/10\text{ AgNO}_3$ V. S. in excess.

Strontii Salicylas.—Rubric changed from "not less than 98.5 percent." to "not less than 99 percent. by weight." Assay: Weigh accurately about 2 Gm. of Strontium Salicylate and thoroughly carbonize it in a platinum crucible at a temperature not exceeding red heat. Dissolve the residue in 50 Cc. of half-normal hydrochloric acid V. S., and submit it to residual titration with normal potassium hydroxide V. S. It should show not less than 99 percent. of strontium salicylate.

Strophanthinum.—Added test: Ash: incinerating 0.1 Gm., non-weighable.

Strychnina.—Solution in sulphuric acid: changed from "no color" to "only a yellow color (sugar and other readily carbonizable organic impurities)." Ash: changed from "no residue on ignition" to "not exceeding 0.1 percent." Melting point omitted. Tests with potassium iodate and with nitric acid omitted.

Strychninae Nitras.—Reaction of aqueous solution changed from "neutral" to "neutral or not more than faintly acid."

Strychninae Sulphas.—Added test: Reaction of aqueous solution neutral or only slightly acid. Melting point omitted.

Styrax.—Added tests: A saturated alcoholic solution becomes turbid when diluted with alcohol. Almost completely soluble in ether, acetone, benzole, or carbon disulphide. When heated on a water-bath, Storax becomes more fluid, and if it be then agitated with warm petroleum benzin, the supernatant liquid, on being decanted and allowed to cool, should not be darker than pale yellow and should deposit white crystals of cinnamic acid and cinnamic esters. The separated crystals evolve the odor of benzaldehyde when heated with diluted sulphuric acid and potassium permanganate. Ash not exceeding 1 percent. On dissolving

about 10 Gm. of Storax, accurately weighed, in 20 Cc. of hot alcohol, the undissolved residue, after washing it on a filter with hot alcohol, and drying the residue at 100° C., should not exceed 2.5 percent. The combined filtrate and washings should, after the evaporation of the alcohol at a temperature not exceeding 60° C., and drying the residue for 1 hour at 100° C., leave a brown, transparent, semi-liquid product representing not less than 60 percent. of the weight of Storax taken; this product should be soluble in ether, with the exception of a few flakes, but should be only partially soluble in petroleum benzin. Weigh accurately about 1 Gm. of Storax, purified as described in the preceding test, dissolve it in 50 Cc. of alcohol, add 0.5 Cc. of phenolphthalein T. S., and titrate with half-normal alcoholic potassium hydroxide V. S. The acid value so obtained should not be less than 56 nor more than 85. Weigh accurately about 1 Gm. of Storax, purified as described above, mix it in a 250 Cc. flask with 50 Cc. of purified petroleum benzin, add 25 Cc. of half-normal alcoholic potassium hydroxide V. S., and allow the mixture to stand 24 hours, with frequent shaking. Then add 0.5 Cc. of phenolphthalein T. S. and titrate with half-normal hydrochloric acid V. S. It should show a saponification value of not less than 170 nor more than 230.

Sulphonethylmethanum.—Melting point changed from 76° C. to "from 74° to 76° C.; at higher temperatures it is decomposed with the evolution of sulphur dioxide." Ash: changed from "non-weighable" to "not exceeding 0.05 percent." Twenty Cc. of a cold solution prepared by dissolving 1 Gm. of Sulphonethylmethane in 50 Cc. of boiling distilled water and filtering, should not at once decolorize 0.05 Cc. of tenth-normal potassium permanganate V. S. (readily oxidizable impurities).

Sulphonmethanum.—Melting point changed from 125.5° to "from 124° to 126° C." In other respects it should respond to the tests of identity and purity given under Sulphonethylmethanum.

Sulphur Lotum.—Assay as under Sulphur Sublimatum.

Sulphur Præcipitatum.—Assay as under Sulphur Sublimatum.

Sulphur Sublimatum.—Assay: Weigh accurately about 1 Gm. of Sublimed Sulphur, which has previously been dried to constant weight at 100° C., and transfer it to a flask containing 2.5 Cc. of a 10 percent. solution of potassium hydroxide (free from sulphates). Boil the mixture until the liquid is of a transparent, golden-yellow color and then dilute it with distilled water to make a volume of exactly 250 Cc. Oxidize 25 Cc. of this diluted solution by the addition of solution of hydrogen dioxide in excess, afterwards acidulate it with hydrochloric acid, and dilute with 100 Cc. of distilled water. Heat on a water-bath for 30 minutes, then bring it to the boiling point and add barium chloride to the resulting liquid until no further precipitation takes place, allow it to stand for 30 minutes, collect the resulting precipitate on a filter, wash, dry, ignite and weigh it as barium sulphate. It should show not less than 99 percent. of sulphur (S) when calculated to the amount of Sublimed Sulphur originally taken.

Talcum Purificatum.—No change.

Terebentum.—Boiling point changed from "160° to 170° C." to "from 160° to 172° C." Modified rosin test: On transferring the residue remaining in the distilling flask, after determining the boiling point, to a dish by means of ether

and evaporating the liquid on a water-bath, any residue remaining should not exceed 1 percent. of the original weight of Terebene taken.

Terpini Hydras.—Added test: Melting point of anhydrous Terpin Hydrate 102° to 105° C. Boiling point omitted. Ash: changed from "no residue when strongly heated" to "not exceeding 0.05 percent."

Theobrominae Sodio-Salicylas.—An aqueous solution is strongly alkaline to litmus and phenolphthalein T. S. An aqueous solution of Theobromine Sodio-Salicylate (1 in 100), slightly acidulated with acetic acid, becomes colored violet on the addition of ferric chloride T. S. When strongly heated, Theobromine Sodio-Salicylate yields a residue which colors a non-luminous flame intensely yellow and effervesces with acids. An aqueous solution of Theobromine Sodio-Salicylate (1 in 20) should be colorless and clear or at most opalescent. Acidulate this solution with hydrochloric acid, then add sufficient sodium hydroxide T. S. to obtain a clear liquid, and shake the mixture with 10 Cc. of chloroform at a temperature of 25° C. The residue obtained from the evaporation of the separated chloroform layer when dried at 80° C., should not exceed 0.005 Gm. (caffeine). About 0.1 Gm. should dissolve in 2 Cc. of sulphuric acid without effervescing (sodium carbonate) and without producing other than a slight yellowish color (organic impurities). Weigh accurately about 2 Gm. of Theobromine Sodio-Salicylate previously dried to constant weight over sulphuric acid, dissolve it in 10 Cc. of warm distilled water and titrate the solution with normal hydrochloric acid V. S., phenolphthalein T. S. being used as indicator. Not more than 5.5 Cc. of normal hydrochloric acid V. S. should be required to neutralize 2 Gm. of Theobromine Sodio-Salicylate. The solution should now be slightly alkaline to litmus or be made so by the addition of 1 or 2 drops of very dilute ammonia water. Allow it to stand at from 20° to 25° C. for 3 hours, stirring occasionally, then transfer the precipitate of Theobromine obtained to a dried and weighed filter of 9 cm. diameter and wash the precipitate and filter with four successive portions of 5 Cc. each of cold distilled water, afterwards drying them at 100° C. and weighing. To the weight of the precipitate thus obtained add for each 2 Gm. of salt 0.13 Gm., which is the approximate quantity of Theobromine remaining in the liquid and washings. The sum should correspond to not less than 46.5 percent. of the weight of Theobromine Sodio-Salicylate taken. About 0.05 Gm. of the precipitate obtained in the preceding assay, when evaporated to dryness on a water-bath with 1 Cc. of hydrochloric acid and about 0.1 Gm. of potassium chlorate, leaves a reddish-yellow residue, which becomes purple on moistening with a drop of ammonia water. Another portion of about 0.2 Gm. of the precipitate, when slowly heated, should volatilize without melting and without leaving a weighable residue. On adding hydrochloric acid to the filtrate from the precipitated Theobromine, a precipitate will be obtained, which, after thorough washing with cold distilled water, and drying at 100° C., should have the melting point given under Acidum Salicylicum.

Thymol.—Added test: Reaction of alcoholic solution: neutral to litmus. Specific gravity of solid omitted. Melting point changed from 50° to 51° C." to "from 48° to 51° C., remaining liquid at a considerably lower temperature."

Residue on volatilizing changed from "no residue" to "not exceeding 0.05 percent."

Thymolis Iodidum.—Rubric changed from "45 percent. of iodine" to "not less than 43 percent. of iodine." Added test: Moisture limit 5 percent. (dried to constant weight over sulphuric acid). Ash: changed from "not more than 3 percent." to "not exceeding 1.5 percent." Assay: Mix thoroughly in a mortar about 0.25 Gm. of Thymol Iodide, dried over sulphuric acid and accurately weighed, with about 3 Gm. of anhydrous sodium carbonate and transfer the mixture to a crucible. Remove any traces of the mixture adhering to the mortar with about 1 Gm. more of anhydrous sodium carbonate and cover the contents of the crucible with it. Heat the mixture moderately, gradually increasing, but not exceeding a dull redness, until the mass in the covered crucible is completely carbonized. When sufficiently cooled, extract the residue with boiling distilled water and wash it on a filter with boiling distilled water until the washings cease to produce an opalescence with silver nitrate T. S. Heat the combined washings, which should measure about 150 Cc., on a water-bath and add an aqueous solution of potassium permanganate (1 in 20) in small portions, until the hot liquid remains permanently pink. Then add just enough alcohol to remove the pink tint, cool the liquid to room temperature, and dilute it to 200 Cc. Mix it well and then filter through a dry filter, rejecting the first 50 Cc. of filtrate. To 100 Cc. of the subsequent clear filtrate add about 1 Gm. of potassium iodide and an excess of diluted sulphuric acid, and titrate the liberated iodine with tenth-normal sodium thiosulphate V. S., adding starch T. S. near the end of the titration.

Uranii Nitras.—Rubric requires not less than 98 percent. by weight of uranyl nitrate. An aqueous solution of the salt (1 in 20) yields with fixed alkali or ammonium hydroxide a yellow precipitate, insoluble in an excess of the reagent, but soluble in ammonium carbonate T. S. Ammonium sulphide produces in another portion of the aqueous solution a dark brown colored precipitate; sodium phosphate a yellow colored precipitate. On mixing 2 Cc. of the aqueous solution with an equal volume of sulphuric acid, cooling the mixture, and adding a crystal of ferrons sulphate, a dark brown color will appear around the crystal. The salt should not respond to the Time-Limit Test for arsenic, lead, copper and bismuth. An aqueous solution of the salt (1 in 20) should remain clear after the addition of an equal volume of ammonium carbonate T. S. (alkaline earths). Dilute 3 Cc. of this mixture to 10 Cc. with distilled water and add 10 Cc. of hydrogen sulphide T. S. No color or precipitate should be produced (iron, manganese, or zinc). A solution of 1 Gm. of Uranium Nitrate in 20 Cc. of distilled water, acidulated with 1 Cc. of diluted sulphuric acid, should not completely decolorize 0.1 Cc. of tenth-normal potassium permanganate V. S. (uranous compounds). An aqueous solution of the salt (1 in 100) should not at once produce a turbidity with barium chloride T. S. (sulphate). Assay: Weigh accurately about 0.4 Gm. of the salt, dissolve it in 100 Cc. of distilled water, heat the solution to boiling, add ammonia water until no further precipitate is produced, and allow the precipitate to settle. Then wash the precipitate well on a filter with an aqueous solution of ammonium nitrate (1 in 100),

and afterwards moderately heat it in a platinum crucible, with free access of air, until the weight is constant. The urano-uranic oxide so obtained should correspond to not less than 54.8 percent. of the weight of the salt taken, which is equivalent to not less than 98 percent. of uranyl nitrate.

Vanillinum.—Added test: Its aqueous solution shows an acid reaction with litmus and is optically inactive. Melting point: changed from "80° to 81° C." to "from 80° to 82° C." "Crystallizing, on cooling, in scales" omitted from test with lead acetate. Ash not exceeding 0.05 percent.

Veratrina.—Melting point omitted. Ash: changed from "no residue on ignition" to non-weighable. Added test: An alcoholic solution of Veratrine (1 in 20) should remain clear after the addition of platinic chloride T. S. (various foreign alkaloids).

Zinci Acetas.—Rubric changed from "in the uneffloresced condition not less than 99.5 percent. of pure Zinc Acetate" to "not less than 83.16 nor more than 87.34 percent. by weight of anhydrous zinc acetate." Assay: Weigh accurately about 1 Gm. of Zinc Acetate, dissolve it in 100 Cc. of distilled water, render the solution slightly alkaline with ammonia water and warm it to 80° C. Now completely precipitate the zinc as zinc sulphide by the addition of ammonium sulphide T. S. and warm the liquid containing the precipitate on a water-bath until the precipitate settles. Then collect the latter on a filter, wash it with distilled water, afterward dissolve it in hot dilute nitric acid (1 in 3), evaporate the solution to dryness in a tared, platinum dish, ignite the residue and weigh it as zinc oxide. The amount of zinc oxide obtained should correspond to not less than 83.16 percent. of anhydrous zinc acetate.

Zinci Carbonas Precipitatus.—Rubric changed from "not less than 72 percent. of zinc oxide on ignition" to "not less than 68 percent. by weight of zinc oxide on ignition." Assay: Weigh accurately about 1 Gm. of Precipitated Zinc Carbonate, transfer it to a flask and digest it with 50 Cc. of normal sulphuric acid V. S. until solution is complete. The residual titration with normal potassium hydroxide V. S., using methyl-orange T. S. as indicator, should show an amount of Zinc Carbonate corresponding to not less than 68 percent. of zinc oxide.

Zinci Chloridum.—Rubric changed from "when anhydrous not less than 99.5 percent. of pure zinc chloride" to "not less than 95 percent. by weight of ZnCl_2 ." Assay: Weigh accurately about 0.3 Gm. of Zinc Chloride in a stoppered weighing bottle, then dissolve it in 20 Cc. of distilled water and add 50 Cc. of tenth-normal silver nitrate V. S. Shake the mixture well and add 2 Cc. of nitric acid and 2 Cc. of ferric ammonium sulphate T. S. The residual titration with tenth-normal potassium sulphocyanate V. S. should indicate not less than 95 percent. of zinc chloride.

Zinci Oxidum.—no change.

Zinci Phenolsulphonas.—Rubric changed from "in uneffloresced crystals not less than 99.5 percent. of pure zinc paraphenolsulphonate" to "not less than 73.71 nor more than 77.39 percent. by weight of anhydrous zinc phenolsulphonate." Assay as under *Zinci Acetas*.

Zinci Stearas.—Rubric given requiring not less than 13 percent. nor more than 15.5 percent. by weight of ZnO . Assay: Weigh accurately about 1 Gm. of Zinc Stearate, transfer it to a flask, boil it with 50 Cc. of tenth-normal sulphuric acid V. S. for 10 minutes and cool. The residual titration with tenth-normal potassium hydroxide V. S., using methyl-orange T. S. as indicator, should show an amount of Zinc Stearate equivalent to not less than 13.0 and not more than 15.5 percent. of zinc oxide.

Zinci Sulphas.—Rubric changed from "in uneffloresced crystals not less than 99.5 percent. of pure Zinc Sulphate" to "not less than 55.86 nor more than 58.65 percent. by weight of anhydrous ZnSO_4 ". Assay as under *Zinci Acetas*.

Zinci Valeras.—Assay as under *Zinci Acetas*; with alternative electrolytic method.

Zincum.—Assay as under *Zinci Acetas*; with alternative electrolytic method.

ON HOLDING OPINIONS.

There are two extremes between which lies a broad, middle way. At the one we find the man absolutely settled in his mind as to everything that confronts him. Long ago he settled the question of his diet and political party. Inmutable as the legal decrees of the Medes and Persians are his beliefs in regard to sports, the weather, dress, divorce, and religion. Having achieved consistency, his mind has undergone a process of ossification. At the other extreme, we behold the novelist who writes of himself:

"For myself, I now accept no creeds. I do not know what truth is, what beauty is, what love is, what hope is. I do not believe any one absolutely, and I do not doubt any one absolutely."

Far from ossification indeed is the state of his brain. Beneath his skull we find a condition not unlike that within the hard and rugged shell of the oyster—absolute softness and pliability. If he believes what he writes he has no opinions on anything whatsoever. Which state of mind do we prefer? It is hard to say. Is it better to be all bone or all jelly?

We know, however, that the middle way is the path for us. We want some settled, definite opinions as a guide to conduct and a foundation for character. We have others held in more tentative fashion, ready to discard them if we find better conviction in other ways of thought. We desire the open mind, but at the same time we must have something to believe in always. We trust in an ultimate, higher destiny for all mankind. We think that, in spite of many setbacks, each generation may build in higher and nobler fashion on the work of those gone before. Out of Chaos comes Order, and out of Order, Beauty.—*Popular Magazine*.

Section on Education and Legislation

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SECTION ON EDUCATION AND LEGISLATION.

FIRST SESSION—WEDNESDAY MORNING, AUGUST 20, 1913.

The first session of the Section on Education and Legislation was called to order at 10:45 a. m., in room "B" of the Masonic Grand Lodge, by Chairman Wilbur J. Teeters, of Iowa, who called on Associate Hugh Craig, of New York, to take the chair while he read his address. (See September JOURNAL, p. 1114.)

On motion of Mr. Wallace, seconded by Mr. Raubenheimer, the address of the Chairman was received and ordered referred to a Committee on Chairman's Address to be appointed to consider the recommendations made. Mr. Craig appointed as this Committee, John C. Wallace, of Pennsylvania; Miss Clarissa M. Roehr, of San Francisco, and G. M. Beringer, of New Jersey.

Chairman Teeters resumed the chair, and called on the Secretary, Mr. Frank H. Freericks, of Cincinnati, for his report.

C. T. P. Fennell, of Cincinnati, moved that the report be received, and that a vote of thanks be extended to the Secretary for his excellent work.

This motion was seconded by C. B. Lowe, of Philadelphia, who said that this was the most remarkable paper of its kind he had ever listened to. As former Chairman of this Section, he knew how much work it had entailed to gather the information the report contained, and he thought the paper might be considered almost encyclopedic in character.

C. M. Woodruff, of Detroit, also heartily approved of the report. As a lawyer of forty years standing, and as one who was perhaps in a better position to appreciate the character of the work done and the labor involved than most of those present, he commended it for its completeness, comprehensiveness and accuracy.

Hugh Craig, of New York, said he would like to amend this motion, not with the idea of detracting from the work of the Secretary, but merely to change the motion to receive it as a preliminary report, as that part referring to Federal Anti-Narcotic Legislation had not been read by the Secretary.

Mr. Freericks explained that he had not read this because he thought the report of the Special Committee on Anti-Narcotic Legislation should come first, and then the work of the National Drug Trade Conference, should be submitted, as he did not wish to interfere in any way with the prerogative of this committee.

Dr. Anderson asked Mr. Freericks if, in referring to the subject of Anti-Narcotic Legislation, he had made any recommendations, and the gentleman replied that he had not. Mr. Anderson said that he saw no reason, then, why the report should not be received at this time.

The Chairman stated that the mover of the motion and his second to it agreed to this suggestion.

Dr. Wallace said that, with full appreciation of the very excellent report made by the Secretary, he desired to say a few words in reference to the laws in Pennsylvania which he believed had not been interpreted just as they were. He did not mean this as a criticism of the report just made, but merely to elaborate the subject a little more fully than had been done by the Secretary. Certificates in Pennsylvania, were, he said, never renewed. They had discovered in Pennsylvania, as no doubt had been discovered in other states of the Union, that licenses and certificates were hung in pharmacies conducted illegally. The bill proposed there was with the idea of providing for a license annually, so as to give the board having charge of the enforcement of the pharmacy law a complete record, annually, of those entitled to practice. This license was only for a store at a particular place, and one license did not give authority to conduct a chain of stores.

Continuing, Mr. Wallace said, with reference to dispensing physicians, that the Legislative Committee of his State Association felt—and the matter had been thoroughly discussed in the Association—that the first step should be to place the dispensing physician upon the same footing as the pharmacist as to the products he dispensed; that they should be subject to inspection by those having in charge the enforcement of the drug laws of the state. In reference to the labeling clause, Mr. Wallace said that the requirement in relation to labels was incorporated for the reason that, throughout Pennsylvania—and he believed throughout the entire country—there were many careless druggists, who would wrap up articles and drugs of different kinds, including poisons, and pass them out without a label. The object was to require that every package that was put out of a drug store in Pennsylvania should be labeled, bearing the name of its contents. It had no reference to proprietary remedies, and this clause in the Pennsylvania law had the approval of the General Counsel of the Proprietary Association. By reason of the restriction of the sale of proprietary remedies, they had never seen any reason why a package that did not contain a narcotic or habit-forming drug should not be sold by any one. He was heartily in favor of the proposition advanced here, as it would require all preparations containing narcotics and habit-forming drugs to be sold by licensed pharmacists. The Anti-Narcotic Law passed in Pennsylvania by the House and Senate, he said, was vetoed by the Governor, for two provisions which were not contained in the bill. Mr. Wallace said the Pennsylvania cigarette law included not only cigarettes, but cigarette papers, and a minor having in his possession cigarettes or cigarette papers, and refusing to tell where they were purchased, was guilty of a misdemeanor, and punishable therefor. In reference to bichloride of mercury, he said this was vetoed because the pharmacists of Pennsylvania filed exceptions to the bill, which provided that bichloride of mercury should not be sold except upon a written prescription of a physician registered in Pennsylvania. Section 70 of the Act of 1860 contained a clause which provided that five poisons, of which corrosive sublimate was one, could only be sold to a reputable inhabitant of full age, in the town in which the purchase was made.

James M. Good, of St. Louis, said that the last speaker had given a great deal

of information on the laws of Pennsylvania, which were not contained in the report, and he was curious to hear what Mr. Freericks would have to say by way of answer to the apparent criticism of his report—or whether he would accept it as an addition to his report.

Mr. Freericks responded that he did not understand the remarks of Mr. Wallace to be in the nature of a criticism.

Mr. Wallace said he had not intended to criticise the report. His object was merely to shed a little further light on Pennsylvania legislation.

Thereupon Mr. Fennell's motion was put to a vote and carried.

Mr. Woodruff, in this connection, called attention to a "strange bill" noted in the Bulletin of Legislation issued by the American Association of Pharmaceutical Chemists that had been passed by one of the states—as he recalled, by one of the Dakotas—making it absolutely illegal to make, sell, or handle in any manner, tobacco snuff.

The Chair stated that the Section would now pass to the reading of papers, and called on B. L. Murray to read a paper by himself and his associate, Mr. Frame, entitled "Some Aspects of Our Poison Laws."

The paper just read was discussed by Messrs. Rusby, Fennell, Mayo, Beal, Hynson, Windolph, Abbott, Wilbert, Woodruff and Murray; and Mr. Mayo, as germane to this subject, offered the following resolution, which was put to a vote and carried:

"WHEREAS, The regulations regarding the shipment of drugs by mail are vague, indefinite and unsatisfactory, and whereas the drafting of such regulations requires special knowledge of pharmacy and its problems, therefore, be it

"Resolved, That the Chairman of this Section appoint a special committee of five men, to prepare such regulations and submit them to the postal authorities for consideration."

The Chair thereupon appointed the following upon the committee provided for in the resolution just adopted: Messrs. Caswell A. Mayo, of New York; B. L. Murray, of New Jersey; J. H. Beal, of Ohio; H. P. Hynson, of Maryland, and J. C. Wallace, of Pennsylvania.

The Chair here called for the report of the delegates to the National Drug Trade Conference, which he said should have really preceded the paper just read and discussed, and the report was presented by Chairman Wallace, of the delegation.

Mr. Beal moved that the report be received, and that the recommendation that the affiliation of the Association with the National Drug Trade Conference be continued be referred to the House of Delegates. Mr. Hynson seconded this motion, and it was put to a vote and carried.

Dr. Anderson moved that, in consideration of the interest shown by Mr. Freericks in anti-narcotic legislation, his paper bearing directly upon this subject should be read at this time. This motion was seconded by Mr. Beringer and carried.

Before proceeding to read his paper, Mr. Freericks disclaimed that he presented it in any representative capacity whatever—either as the Secretary of this Section, or as the representative of another body. It was presented merely as expressing his individual views.

Dr. Anderson said the paper just read was one of great importance to this Association, and the matter contained in it was of such a character that free

and full discussion of it should be had. It was now already near the adjourning hour, when such discussion would be impossible, and he moved that the paper be merely received at this time, and that discussion thereon be postponed until the session this afternoon. Mr. Beal seconded this motion, and it was duly carried.

Dr. Anderson thereupon moved that the Section proceed with the nomination of officers for the ensuing year, and this motion was seconded by Mr. Beal and carried.

The name of Hugh Craig, of New York, was placed in nomination for Chairman by Mr. Wallace, who referred to the gentleman as one who was interested in everything pertaining to pharmacy. Dr. Anderson seconded this nomination, and moved that nominations be closed, which motion was duly seconded and carried.

Nominations for Secretary were called for, and Mr. Beal nominated Frank H. Freericks, the present incumbent, to succeed himself, and this motion was seconded by Mr. Anderson. Mr. Freericks asked for the privilege of withdrawing his name from nomination, and gave as a reason that, while he had no desire to shirk any duty, the calls upon his time were manifold, and the position of Secretary was of too much importance to neglect. The Chairman was loath to agree to this request, however, and Mr. Wallace not only added his second to the nomination, but earnestly insisted that Mr. Freericks should accept. Thereupon, Dr. Anderson moved that nominations be closed, and this motion was seconded by Dr. Beal and carried.

Nominations for the three associates on the committee were called for, and E. C. Marshall, of Boston, was nominated by Dr. Anderson. Miss Clarissa M. Roehr, of California, was nominated by Mr. Mayo, and the nomination seconded by Mr. Wallace. R. A. Kuever, of Iowa, was nominated by Mr. Wallace, and the nomination seconded by Mr. Beal. On motion, nominations for associates were closed.

Thereupon, upon motion of Mr. Beal, duly seconded, the Section adjourned to meet again at 8 o'clock this (Wednesday) evening.

SECOND SESSION—WEDNESDAY EVENING, AUGUST 20, 1913.

The Section was called to order at 8:30 o'clock p. m. in Room "B" of the Masonic Grand Lodge, by Chairman Teeters, who stated that adjournment of the morning session was had with the understanding that the discussion on the resolution offered in connection with the paper of Mr. Freericks would be taken up at this time, but it had been suggested that this discussion be delayed until later in the evening.

Mr. Wallace arose to a question of personal privilege. This morning, he said, following the Report of the Secretary of the Section, he had interpreted the clause in his report, which read, "It provides for an annual registration of place of business," to mean an annual registration of certificate. He now begged to state that the Secretary's report was correct in the language used, and he felt it was only due Mr. Freericks to say so.

The Chair said that he heard no objection to the suggestion to delay the discussion, and so he would call for a paper on "The Need for Uniformity in Laws

Relating to the Manufacture and Sale of Poisons and Habit-Forming Drugs," by M. I. Wilbert, of Washington.

This paper was discussed by Messrs. Beal, Freericks and Wallace, and received and referred for publication.

A paper entitled "A Suggestion or Two," was read by J. M. Lindley, the writer.

Following some remarks by Dr. Anderson, the paper was received and referred for publication.

The next paper called for was one on "The Letter of the Law," by Charles H. LaWall, of Philadelphia, but the author was not present, and, on motion, the paper was read by title and referred for publication.

H. L. Taylor, of Albany, presented his paper on "The Standardization of a Three-Year Course."

Mr. Wallace moved that the paper be received, and that the resolution creating the committee referred to be approved, and this motion was seconded by Dr. Anderson and carried.

A paper entitled "Form of Law for Regulating the Itinerant Vending of Drugs and Poisons," was read by J. H. Beal, the author.

The paper was discussed by Messrs. Freericks, Nixon and Cassaday, and referred for publication.

Dr. Anderson moved that the Section now proceed to the discussion of the paper and accompanying resolutions presented by Mr. Freericks at the morning session, and Mr. Beal seconded this motion, which was put to a vote and carried.

Mr. Freericks stated that, in order to get these resolutions properly before the Section, he would move their adoption, but suggested that in order for those who were present now who were not present at the morning session to act upon the matter intelligently, it might be well for him to read the resolutions again. This he proceeded to do.

The American Pharmaceutical Association heartily approves and endorses the effort for proper Federal Control and Supervision over the distribution and sale of Narcotics. In so far as this effort is evidenced by the Harrison Anti-Narcotic Bill, known as H. R. No. 6282, and now pending in the United States Senate, it heartily endorses said Bill. In so far as the labors of the National Drug Trades Conference have resulted in bringing about necessary and reasonable changes in such heretofore proposed legislation, such labors are commended and our appreciation thereof hereby expressed.

Resolved, That H. R. Bill No. 6282, as now pending in the United States Senate, discloses to us the following important objectionable defects.

First. It exempts Dispensing Physicians from the requirement to distribute and sell Narcotics only on written prescriptions, which under the intended Act are to constitute a record for supervision and control. In our opinion this requirement is essentially as necessary to govern the Dispensing Physician as it is intended to govern the Pharmacist.

Second. The Bill would require every Physician, Dentist and Veterinarian to become registered as a Retail Dealer in Narcotics. Many physicians avoid entirely the dispensing of narcotics or other drugs, and where in emergency they must use narcotics, these are administered by themselves. To us it would appear unjust and improper to require such physicians to become registered as Retail Dealers.

Third. The Bill imposes upon every Pharmacist who would fill the prescription of a physician the duty to know that such physician is registered as a dealer, under the danger of a two thousand dollar fine or five years' imprisonment. The Bill provides no reasonable or ready means for Pharmacists to know whether the physician is registered, and, even if such means were offered, the provision is both unreasonable and unnecessary, endangering every Pharmacist who would honestly and legitimately conduct his business.

Fourth. The Bill in its present form permits the sale of preparations containing minimum quantities direct to the consumer in Interstate Commerce. For the effective purposes of the Bill such is entirely unnecessary, and would undo the effort now made in many states to limit the sale of such preparations entirely to qualified people.

Fifth. Sub-Section a and b of Section 2 of the Bill, applying particularly to the distribution and sale by Physicians, Dentists, Veterinarians and Pharmacists involved both a discrimination under the Act as between those who are registered and a delegation of legislative power, and in that sense and on that account are apt to make unconstitutional the most important feature of the Bill.

Resolved, That a copy of these resolutions and of these objections be at once submitted to Dr. Hamilton Wright, to the National Drug Trades Conference and to every Senator of the United States.

The motion to adopt the resolutions was then seconded by Mr. Marshall.

Dr. Anderson stated that as resolutions upon the same subject had been presented to the House of Delegates, and referred to the Committee on Resolutions of that body, he would like to amend this motion to the effect that these resolutions be also referred to the House of Delegates, so that they could all be acted upon at one time. This motion had a second in Mr. Wallace.

Mr. Freericks dissented from this view. He said this was a deliberate body, and one thoroughly qualified to pass upon the resolutions presented. He was frank to admit that he was not as familiar with the powers of the various Sections as he should be as to the adoption of resolutions brought before them, and he thought the members generally were lacking in knowledge upon this subject; but he did know the House of Delegates was merely a deliberative body, with power to suggest, but not to bind. Its action must always be passed upon by the Council before it became a finality, and he did not think it was well to refer such an important matter as that now under discussion to a body having no final power, and from which it must be referred to the Council, which was vested with such power. He expressed the hope, therefore, that this Section would retain to itself whatever power it had to approve or disapprove the resolutions offered.

Dr. Anderson responded that he would not contend that this Section had not the right to formally approve or disapprove of these resolutions; but in the first place, the resolutions themselves distinctly stated that the American Pharmaceutical Association said such and such a thing, and it should be remembered that the Section on Education and Legislation was not the American Pharmaceutical Association, and the only power the Section had was to refer the resolutions to an open session of the Association, with a favorable or unfavorable recommendation. Final action upon them would have to be that of the Association in general session. He said he had made the motion of reference because he believed it would prevent a double or treble discussion on this question, and the House of Delegates was organized for the express purpose of facilitating the work of the Association and the Sections, by taking such resolutions as might be offered, and referring them to a committee for careful consideration and report. The House could then, by comparison and adoption or rejection of the various resolutions coming from the general sessions and the several Sections, present to the final session of the Association a consistent and unified series of resolutions, which could be read one after another, and final action taken with intelligence and rapidity. For these reasons, he favored reference of the resolutions in question to the House of Delegates, and thought it would be an injustice to those presenting resolutions approving of the Harrison bill for this Section, independently, to take directly opposite action. Those resolutions had been referred to the House of Delegates, and he thought these should be.

Mr. Freericks asked Dr. Anderson if it was not true that, if these resolutions were referred to the House of Delegates, the House would have no final power with reference to them. Dr. Anderson, in reply to this, stated that this Section had no more power with respect to final decision than the House of Delegates. Mr. Freericks' response to this was, that it seemed the proposition now was, to refer a set of resolutions from this body, which had no final power, to another body which likewise had no final power, so that the resolutions might be turned over to a body that did have final power. He thought it was just as consistent to turn them over from this body, which had no final power, to the body which did have final power, as to pursue the circuitous route proposed, and he thought the resolutions should be disposed of by the Section. There would be no conflict, he said, and could be none, because these resolutions were of a nature that made them speak for themselves; and even if there was a conflict between these resolutions and others offered, that conflict must be decided at last by the body in which final power reposed.

Mr. Wallace made the point that the recommendations attached to the Report of Delegates to the National Drug Trade Conference had been referred this morning to the House of Delegates, and it was not right to take up now and act upon resolutions nullifying the resolutions referred to the House.

Mr. Freericks responded to this that the matter referred to the House of Delegates this morning was the recommendation that the American Pharmaceutical Association continue in affiliation with the National Drug Trade Conference, and that the resolutions here presented did not in any manner conflict with that recommendation.

Thereupon the Chair put the vote upon the amendment of Dr. Anderson to refer the resolution to the House of Delegates, and it was so ordered.

In response to a question by Mr. Freericks, the Chair held that this action did not preclude discussion upon the resolutions, and stated that they were before the Section for that purpose.

After a brief colloquy, participated in by Messrs. Freericks, Wallace, Anderson, Craig, Wilbert and the Chairman, as to the time and manner of discussion, during which it was suggested that Mr. Freericks appear before the Committee of Resolutions of the House of Delegates and discuss his resolutions, which privilege he declined to accept, the Chair, upon withdrawal of all objections to general discussion at this time, told Mr. Freericks he could proceed.

Mr. Freericks stated that in presenting these resolutions, it had been done after considerable thought and study, because, as he had said this morning in his paper, he fully realized that upon this proposition he differed in opinion from men who in many respects deserved to have greater consideration, and to whom the members would more properly go for advice in matters of this kind. The Harrison bill now under discussion—and which was said to be the result of the labors of the National Drug Trade Conference—was, as all knew, now pending in the Senate of the United States. It carried with it many provisions, and many things in it were commendable. A law to control the narcotic evil was one that all commended, and there were many things in this bill which should be approved by every one interested in pharmacy and things that pertained to pharmacy. He contended, however, that this law contained serious defects,

which applied in particular to the interest and welfare of the general public, and affected the retail drug trade of the country. His first objection was, that the proposed law made a distinction between the dispensing physician and the pharmacist with reference to the sale of narcotics. The bill now pending in the Senate provided that pharmacists might sell the named narcotics only on the prescription of a physician, dentist or veterinarian, and required that he keep such prescription so filed as a record, open to the inspection and supervision of the Federal and State authorities at all times. In direct contradistinction to this provision the bill provided that the dispensing physician or physicians in general might dispense these narcotics, without any record whatever being kept by him. He said he was firmly convinced that the narcotic evil, as it existed in the country today, could not and should not be laid entirely at the door of the retail druggists. He contended that the dispensing physician was fully as guilty as the retail druggist in furthering this evil as it existed; there were quite as many "black sheep" among the dispensing physicians as among the retail druggists of the country, and if those who had drafted this bill believed it was necessary that a method of supervision by the Federal authorities be had as against retail druggists in the dispensing of narcotics, he thought such method of supervision should apply with equal force to dispensing physicians. If it was the hope to control the narcotic evil by requiring retail druggists to sell only on prescription, which prescription must be kept on file, such hope must be based upon the supposition that such supervision was intended to be effective; and if it was intended to be effective as against the druggist, it could and should be made effective as against the physician. If certain results were desirable as against the druggist, they were equally desirable as against the physician. The point he desired to make was that if the proposed law compelled the druggist to keep such a record, and if it was the idea that such would be a sufficient method of supervision to prevent these "black sheep" now in the drug business from selling illegitimately, then, unless the law equally applied to the physician, the actual result would be that this illegitimate trade would be driven from the "black sheep" in the drug business to the "black sheep" in the medical profession; and, consequently, the public would not be served by the passage of a bill bringing about such a result.

His second objection, Mr. Freericks said—and one which he believed was of vital import, both from the point of view of the druggist and the public—was, that the bill would require every physician, dentist and veterinarian to register as a retail dealer in narcotics. In the larger cities of the country, he expressed the belief that half of the practicing physicians never made it a practice to dispense narcotics, so why should they be required to register as retail dealers in narcotics? This was a question that he could not satisfactorily answer to himself. Why was it necessary for a dispensing physician who had never made a practice of dispensing narcotics to be required to register? What would be the result? The result would be simply this: that the physician who had never made a habit of dispensing, but who was required to register as a dealer in narcotics under this law, would say to himself: "Oh, I have to go through a great deal of red tape when I write a prescription for these narcotics; I have got to put on the name of the person, and a whole lot of other things, on that

prescription. Why, I will just carry the stuff along; I will simply dispense; it will save me a lot of trouble." The result would be that there would be more dispensing physicians because of the Federal Narcotic Bill, which had the approval of the National Drug Trade Conference.

Mr. Freericks said his third objection was, that the bill now in the Senate, which had been approved by the National Drug Trade Conference, would make it necessary for every retail druggist to know that the physician who was sending him a prescription for narcotics was a registered dealer under that act. How was he to know that? Only by one method as provided under the law, and that method was that he must go to the Internal Revenue Commissioner, and pay one dollar for the names of one hundred registered dealers. In this country there were 100,000 and more registered physicians alone! The retail druggists must, if this bill became a law, pay at the rate of one dollar for each 100 names of registered dealers, or run the risk of serving a jail sentence of from two to five years, or paying a fine of \$2,000. He thought this was a shameful condition to be put upon the retail dealers of this country by a Conference that designated itself as the "National Drug Trade Conference," and would imperil their liberty and property.

Continuing, Mr. Freericks said that another objection he had to the Conference bill was, that it permitted the sale in interstate commerce of preparations containing minimum quantities of narcotics. It was no violation of faith on his part to say that the Conference had decided by unanimous vote that the bill should provide that the sale of preparations containing minimum quantities of narcotics should, in interstate commerce, be limited to registered dealers. But what would be the effect of such a provision? It would mean that the mail order houses and other unqualified dealers could send from one state into another these preparations containing minimum quantities. Was it a desirable thing to have such a provision in the law, if such law was to be in the public interest, and for the public welfare, to say nothing at all of the interest of the retail druggists? Many states were endeavoring now to pass laws which would limit the sale of preparations which contained narcotics in minimum quantities entirely to qualified dealers; but if this law was passed, then the qualified dealers of other states could send their manufactured articles directly into states passing such laws, and sell them to their citizens, thus nullifying the law of the state passed for the public good. In many cities of the country today, the druggists had decided, through their local association, to discredit the sale of soothing syrups containing narcotics in minimum quantities. He considered this was a step in the direction of the public good, and he considered that the National Drug Trade Conference had stultified itself in its bill, by reversing its previous unanimous action in this behalf, and leaving out of the bill an excellent provision that might easily have been embodied in it.

Finally, Mr. Freericks said, his objection to the Drug Trade Conference bill was, that, in its most important provisions, those which meant the real force and effect of it, it was unconstitutional, and he hopes to make this plain to the members. He expressed the conviction that if the bill as it was now pending before the Senate became a law, it would be a wasted piece of legislation. The proposed law provided for a record form of purchase, but said there should be

exempted, first, the dispensing of narcotics by a physician, dentist or veterinarian, which classes were not required to keep a record. Then, it permitted narcotics to be sold by pharmacists on the written prescription of a physician. Bearing in mind that this same bill provided that every one who would be a dealer in narcotics must pay out a tax of one dollar for that privilege, and that those who paid the tax should have certain rights in the sale of these preparations, the result of the excepting clauses with reference to physicians, and to pharmacists under certain conditions, was that if a certain class of registered dealers who paid the tax were privileged to sell only to certain people, whereas other classes named might sell to certain other people, and at the same time were privileged to sell to all of the people the first class might sell to, it was easy to see that the act would be discriminatory. To illustrate how this matter would work, he took the liquor tax as required by the Federal Government, and asked the members if they could conceive of an act being upheld as constitutional law which said that retail liquor dealers might sell to the consumer only on the prescription of a physician, but if the physician himself should dispense it, that would be all right, but others could not do it. "Can you conceive of a limitation which would make such an exemption constitutional," said Mr. Freericks. "It is impossible; and it must appeal to your good judgment, without any reference to law, that such an exemption as would, in applying a tax to all, give certain of the people a right to do certain things, and certain other people a right to do other things besides those the first class might do, would be unconstitutional. In other words, this would be a clear discrimination, under a taxing law of the Federal Government, which I am satisfied all of you will see is an impossible provision."

The objectionable features of the proposed law were to be found in subsections a and b of section 2 of the bill, which he thought were as clearly unconstitutional as it was possible for a thing to be; and yet it had the almost unanimous endorsement of the National Drug Trade Conference.

Mr. Freericks concluded by saying that he was not presenting these questions because of any personal feeling with reference to them, but because they were live questions, vitally affecting the interests of the retail druggists of this country. He presented them for consideration here, because he regarded it as high time that the druggists should seriously consider the objections pointed out; and he expressed the conviction that if they were not seriously considered as affecting the public interest and the interest of the retail druggists of the land, a law would be passed that would bring untold harm to the retail drug trade of the United States, and at the same time be of no benefit to the public.

C. F. Nixon, of Leominster, Mass., asked if there was anything in the bill which prohibited any one in the United States from being registered, and Mr. Beal answered in the negative. Mr. Nixon then asked what was the good of the bill, and Mr. Beal responded that the only object of the bill was to trace certain narcotic drugs from the time they left the ports-of-entry until they reached the hands of the last distributor, leaving the regulation of the final distribution of these narcotics to the only power that could constitutionally regulate them, namely, the several states of the Union, under their right to regulate their internal affairs. This was the sole object and purpose of the bill.

Dr. Anderson asked Mr. Freericks what wording he would propose in that provision of the bill referring to physicians' prescriptions, those who were registered under the act.

Mr. Freericks replied that, in the first place, he would not use the wording at all. In the second place, the purpose sought by those who drafted the bill, and who had used the word "registered," could be served just as well by leaving it out altogether.

Dr. Anderson then asked Mr. Freericks if it was his idea to simply say: "All prescriptions are exempt under this act?"

To this Mr. Freericks responded in the negative, and said he pointed to the fact that the provisions as they stood were unconstitutional, and that they would be unconstitutional whether the word "registered" was in the bill or not. On the other hand, if the bill should become a law and be held constitutional, contrary to his view of it, then it would endanger the retail drug trade of the country by imposing upon druggists the conditions that they must know that every prescription they filled was written by a man registered under the act. He thought the word "registered" should be left out altogether, and that the same result aimed at in the minds of the committee would be attained as well without it as with it.

Dr. Anderson explained that he had asked this question because this very subject of the wording of the provision had been considered for two hours by the National Drug Trade Conference, in order to try to get a wording that would be legal. If his recollection served him right, in the first one of the bills considered it exempted the prescriptions of physicians, dentists and veterinarians registered in their respective states, and he was quite sure that Mr. Freericks was the one who raised the point that that was unconstitutional, and that state's rights could not be thus interfered with; and so that wording was eliminated.

Mr. Freericks said that the recollection of Dr. Anderson in this behalf was correct.

Dr. Anderson then went on to say that another gentleman, whose name he could not recall, had proposed the wording, "A physician known in the community where the prescription is written." The idea was that prescriptions must be exempted, else pharmacists would not be allowed to compound prescriptions under the act. The question was, then, if prescriptions were to be exempt, whose prescriptions were to be exempt? Somebody had to be specified. It could not be left open, so that any one could write prescriptions for cocaine, and the patient take it to any druggist and have it compounded. The same thing was true with regard to morphine tablets and the like. This provision had been put in the bill to protect the retailer in the compounding of prescriptions. He contended that pharmacists today were just as much bound, morally, in the compounding of narcotic prescriptions as this bill would bind them legally. His position was, that the pharmacist should know something about the physician who wrote a narcotic prescription, and not take a prescription signed by any one, regardless of whether he knew anything about the physician who signed it or not. Pharmacists who were careful and conscientious did not, as he believed, do that today.

Continuing his remarks along this line, Dr. Anderson said that the idea of

putting in this provision, so far as the authorities at Washington were concerned, was to prevent the distribution of narcotics illegally, so that, if a physician who was not registered under this act should write such a prescription, he could be found out and punished. They were not after the druggists, and he doubted if a druggist inadvertently compounding a prescription one time of a physician not licensed under the act would be put to much trouble about it. Of course if he continued to do it, he would have trouble. He could see no great harm, therefore, in this provision, and did not think the retail drug trade had anything to fear from it. He was sure that the Conference would be glad to accept an amendment from any one who would come to the rescue and show, and put it in legal phraseology, just whose prescriptions might be exempted legally.

There were too many angles to this big subject to discuss them all at one time, said Dr. Anderson, but he did wish to touch upon the dispensing-physician proposition which Mr. Freericks had brought forward, and to state that so far as the dispensing physician was concerned, he believed this practice was increasing, and ought to be restricted; but he believed those restrictions should come by way of separate legislation, and should not be embodied in this narcotic act. When they had first started in to formulate a bill it was because, first, they favored the restricting of the sale of narcotics to legitimate channels, stopping the distribution of it in an illegitimate way and for illegitimate purposes; and, second, in order to prevent the passage of legislation that would be most detrimental to the interests of the retail drug trade, and ineffective at that. He had no desire to go into the details of the original bill, but wanted particularly to say that the retail druggists of this country could not have complied with its provisions. He took the regulation proposed as to Dover's powders as an illustration, and pointed out the requirement of a revenue stamp on the prescription as it went out, and to the fact that when the pound of opium was all gone the pharmacist had to make a report to the Revenue Department, showing on one side of the column provided that a pound of opium had been bought on a certain day, and on the other side of the column how it was sold. A committee had gone to Washington to show the Department that this was wrong, and had had a great deal of work in doing so, because the Department was quite insistent that that process of record-keeping was the very thing they wanted and were going to have. It was the work of the Conference, Dr. Anderson said, that got rid of this. They had finally gotten matters to the point where every retail dealer had to order goods on a special order-blank provided by the Internal Revenue Department—the dispensing physician, as well as everybody else. The implication of the remarks of Mr. Freericks was, that the Conference had done nothing in regard to the dispensing physician; but it was a fact that he must keep a record of his purchase the same as the retail druggist did. When it came to dispensing, the retail druggist must place his prescription on file; that was done now, however, under the present requirements, and there would be no extra hardship entailed in this. But even if the dispensing physician were required to place a prescription on file, this would not prevent the dispensing of narcotics without it, for fifty prescriptions a day for narcotics might be dispensed, and only five of them put on file, and nobody would ever know the difference. If this restriction were placed upon the physician it would lead back to the re-

quirement that they had been trying so hard to keep out, namely, the daily record-keeping by the druggist which the Department wanted.

Continuing, Dr. Anderson went on to say that this issue was not only a live one in the United States, but was a world issue, and the representatives of the different countries, in session at The Hague at this time, were considering this question of narcotic legislation. The claim he made with reference to this particular bill was, that if this provision with reference to the dispensing physician was tacked onto it, it would delay the passage of the bill or kill it; and as proof of this he reminded the members of their own experience and observation of the bills introduced into the legislatures of the different states in the last few years, where the tacking on of such provisions had killed them. The retail druggists of the country could not afford to be accused—and perhaps justly accused—of tacking onto this bill something that they knew would kill it. The States today that had narcotic legislation could not enforce their laws, because of these narcotics that passed over the border. He knew from experience in his own State and city how they had to work to stop the distribution of cocaine, for example. They had been able to control it so far as the city was concerned, but it was being sold on the streets by peddlers who got it, not in New York, but across the border.

In conclusion, Dr. Anderson paid high tribute to the National Drug Trades Conference, which he said Mr. Freericks seemed almost to sneer at at times. He said it had been one of the greatest things that had occurred in American pharmacy in a long time. The different interests of the country had been gotten together in that Conference, and it was remarkable to see how they had been brought together on different propositions. He expressed the hope that, for the welfare of the retail drug trade of the country, and for the honor of retail pharmacists and the American Pharmaceutical Association, the members of this organization would show their confidence in those men who had worked earnestly, day and night, to relieve the trade of oppression and secure what was right and just for them. "Let the pharmacists of this country hold their heads up as they have always done," said Doctor Anderson, "as leaders in the community, who relieve the community of anything oppressing it; and there is nothing oppressing the community greater today than this narcotic evil."

Mr. Woodruff here took up the discussion, and began by saying that this was not a thing to get excited over, but something that should be looked squarely in the face. He said that he supposed no one had had more to do with the character of legislation in the last five years than he. He had thought when he heard the members discussing their curriculum for a pharmaceutical education that it would be well for them to put in that curriculum a course on Jurisprudence and Constitutional Law. This would not be a difficult course for one who had had the preliminary education which anyone entering upon the study of any profession ought to have. A preliminary education was necessary to discipline the mind to comprehend the principles of the particular profession proposed to be entered upon.

Coming up to the particular subject of discussion, Mr. Woodruff reminded the members that this was not the only bill pending in Congress upon the subject of opium legislation. A bill was now pending there known as the Mann

Bill, against which a fight had been made in different Congresses for the past five years. That bill would require the pharmacists to register and pay a tax of one dollar a year; and not only was that so, but it would require him to keep records and make reports, and subject him to fine for occasional inadvertence, even though he was trying to live up to the law. He recalled that at the last meeting of the N. A. R. D., a protest was lodged against this bill, and also at the last meeting of the American Pharmaceutical Association this body had protested against it, as an injustice to the rights of the wholesale dealer, to the manufacturer, and to the retail trade. He read the following as being the clause in the Harrison Bill considered objectionable by Mr. Freericks:

"Nothing contained in this section shall apply to the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist, or veterinary surgeon registered under this Act, in the course of his professional practice; provided, however, that such physician, dentist, or veterinary surgeon shall be personally attending upon such person."

The dispensing physician was restricted as much as possible. It was considered whether or not a doctor called to the bedside of a patient under circumstances which required him to administer a hypodermic injection of morphine should be expected to make a record, or to write a prescription. This provision was not made for the physician who, under cover of his profession, gave out cocaine to every Tom, Dick and Harry. He had happened to be in Philadelphia when they were trying a physician for writing a prescription unlawfully for an unfortunate victim of this habit, and in that case the prescription called for one whole ounce of cocaine. That prescription would not come under the exemption of this bill at all. It should be remembered that this measure was not a police measure, for Congress has no police power. The Constitution of the United States provides explicitly that the police power of government is reserved to the several States. This objection had been made to the bill of Mr. Harrison in a public interview had with him, and he had pointed out the fact that Congress had no such power. This was an evil the States must correct, and it is up to the States to correct any evil relating to the dispensing physician; and, so far as the sale of cocaine was concerned, there was ample authority for them to deal with it as a police measure, and he thought practically all the States had such a law, though some were better than others. The only way Congress could affect such State statutes was in the operation of interstate commerce. As he had pointed out to the Pennsylvania State Examining Board in 1909, what was needed was an act, not to regulate the sale of cocaine, but to prevent the practical nullification of State laws by reason of interstate commerce. He had told the Board that his people would confine their sales to the wholesalers in the State of Pennsylvania, and upon them would rest the responsibility of keeping the records required by the State statutes. Upon one occasion, he said, a druggist in Detroit had called him up by phone and asked him if there was anything to prevent a man from expressing cocaine to a party in Texas, where he couldn't get what he required from any one in the State on account of the Texas laws. He had replied, "No, there is not; but I wish to God there was!" If the man had asked him if there was anything in the law to prevent him from mailing it, he would have answered in the affirmative.

Continuing, Mr. Woodruff said it should be borne in mind that the members

of the House and the Senate knew all about these constitutional questions, and that, in fact, the bill in the senate was not exactly as the Conference had written it. For instance, the word "export" had been stricken out of the bill, to save its constitutionality.

This bill, theoretically, was a taxing law, and was not to be construed as though it were an act under the provisions of the Federal Constitution regulating interstate commerce. Its real object was not to regulate, but to afford a convenient system by which all these interstate transactions—in fact, all transactions—might be open to the inspectors of the several States.

As to the constitutional principle involved, Mr. Woodruff went on to say that it had been stated that, under the taxing power, a provision which related to the uniformity of taxes had a geographical operation only—that the tax must be in the same ratio in Tennessee as in Michigan, for example. But this did not prevent Congress from taxing classes, so long as it applied to every individual of that class. He cited for illustration a case that had arisen under an excise law, as he remembered, in the early history of the country, a law relating to the taxation of carriages, where the proposition was made before court that because the law did not relate to other property than carriages, it lacked uniformity, and was therefore unconstitutional. But the Supreme Court said no, that the point of uniformity was a geographical question; that so long as it related to all carriages, to carriages in one State as well as carriages in another, and was uniform in that respect, it was a lawful exercise of the taxing power.

With respect to the bill under discussion, Mr. Woodruff said he did not believe there was a question that could be raised with respect to it that had not already been settled judicially, and this was something to be proud of. They had had the assistance of the law officers of the Revenue Department in getting the bill into shape; and in addition—and this was a fact that he assumed that Mr. Freericks was not familiar with, as it had never been published so far as he knew—after the Drug Trade Conference, Dr. Hamilton Wright had signed an agreement that it was satisfactory. They had both the State and Internal Revenue Departments to deal with, and had gotten all they wanted; it was agreed to, and it was the distinct understanding—as he thought Dr. Beal and Mr. Wallace would remember—that it would receive the approval of the Department, had not only passed through the law offices of the Revenue Department, but the expert lawyers of the Department of Justice, presided over by the Attorney General of the United States and the Solicitor General had scrutinized it, he said. It was very unusual for bills of this character, having to do with questions in the Department of Agriculture, to take this course.

"Now, what is going to be the effect if we embarrass Mr. Harrison in getting this bill through the Senate?" said Mr. Woodruff. The National Drug Trade Conference, which expects and hopes to effect so much legislation that will at once protect the people and do no branch of the trade an injustice, might as well close shop, and trust to luck for future legislation."

Mr. Woodruff went on to say that no body of men had ever met with more respect in legislative-making circles in Washington than the representatives of the Drug Trade Conference. They had met there representing pharmacy in all of its phases—manufacturing pharmacy, wholesale pharmacy, retail pharmacy.

At the first conference they had, representatives of the American Medical Association were telegraphed to appoint a Committee, that their interests might be looked after. The man who had been appointed to represent the American Medical Association, was Mr. M. I. Wilbert and it was Mr. Wilbert who had suggested this official order-blank.

In conclusion, Mr. Woodruff pointed out various objections to the first Harrison bill they had succeeded in having eliminated details that were so absolutely impossible of compliance with, that they would have put the whole drug trade in jeopardy. When the Foster Bill was up before Congress, he had stood almost alone in opposition to it, because there was no National Drug Trade Conference then. The next meeting of the National Association of Retail Druggists had repudiated the Foster Bill, and later at the Denver Meeting the American Pharmaceutical Association had done the same. He closed with the advice: "Now, let us support this bill. You don't know what you will get if you don't."

Mr. Wallace closed this long discussion, and took sharp issue with Mr. Freericks upon several points in his statement. He said he had realized this forenoon, after the gentleman's paper had been read, that the Delegates to the National Drug Trade Conference had made a serious mistake in their report in not interpreting to this organization the specific provisions attached to the Harrison Bill. The members who were familiar with it never thought there would be such a garbled trimming of the bill as had taken place here tonight.

Mr. Wallace went on to say that Mr. Freericks had raised a number of questions in relation to provisions of the bill referring to dispensing physicians. But which was worse, he asked, to permit the physician to dispense, or to provide to the "dope-fiend" all the "dope" he wanted, upon an affidavit setting forth that fact? He thought the latter was immeasurably worse. The provisions of paragraph "a" of section 2 did not grant the dispensing physician any exclusive rights, such as those Mr. Freericks had set forth. He quoted the following language from that paragraph of the bill:

"Nothing contained in this section shall apply to the dispensing or distribution of any of the aforesaid drugs to a patient by a physician, dentist or veterinary surgeon rendered to a patient in the course of his professional practice; provided, however, that such physician, dentist or veterinary surgeon shall be personally attending upon such patient."

Mr. Wallace wanted to know if this opened the gates and let down the bars, so that the physicians could come out and peddle. He would certainly say, No.

He was equally radical in his difference with Mr. Freericks as to the constitutionality of the proposed act, and stated that without in any way desiring to impugn his legal knowledge—he was led to state that there were present in that Conference men whose legal ability was the equal of that from any quarter, and the measures had had the scrutiny of the best legal lights in the Government Service at Washington. He referred to the attitude of Congressman Burton Harrison of New York, and Mr. Mann, of Illinois, who, he said, was one of the best constitutional lawyers in the House of Representatives, in support of this bill.

In respect to the filling of prescriptions by physicians registered under this act, Mr. Wallace said that he had no hesitation in making the public declaration that he didn't believe any pharmacist who was not a "dope-seller" would be

willing to fill a prescription for "dope" which was not written by a physician whom he knew to be a legally authorized, registered physician. "There is not a circus of any kind that trails the country, from the Atlantic to the Pacific, that doesn't carry in its wake a lot of 'dope-fiends' who have prescriptions calling for 'dope'," said Mr. Wallace; "and I don't believe there is any pharmacist who honors his profession who wants to compound a prescription for a narcotic that he is not sure has been written by a registered physician."

Mr. Freericks, responding to the strictures upon him, said that he desired to say, first, that it was not a question as to whether prescriptions of a licensed physician should be filled. It could be taken for granted that those who were in the drug business did not wish to fill prescriptions for men they did not know to be licensed physicians. It was not a question of whether the pharmacist knew whether the particular doctor was really a licensed physician, but as to whether he was a dealer in narcotics; that was the question.

Responding to that portion of Mr. Wallace's remarks to the effect this provision did not mean that the "dope-dealing" dispensing physician could deal out "dope" if he wanted to, but that it must be done by the physician in the course of his professional practice, as shown by the language quoted from the bill, Mr. Freericks pleaded for a practical view of the matter, and said that everybody knew that there was a class of physicians who were guilty of this very practice, and who made the excuse that, "it was given in the course of my professional practice, and in personal attendance on this particular patient, who needed it badly." He thought the argument made was very defective, in view of the well known facts of the matter. He said the disposition of his critics was to beg the issue, as they had tried to distract attention from vital matters by bringing up provisions of the old original bills which had been long ago thrown in the waste-basket as unworthy of acceptance. When a certain Committee had appeared before the Ways and Means Committee of the House of Representatives, it had only needed a logical presentation of the question to settle it, and the Committee on Ways and Means would not listen to any such proposition as was presented by Doctor Wright.

Referring to the argument made that this provision under which pharmacists were required to keep a record of prescriptions, or keep the prescriptions on file, if applied to and made applicable to the dispensing physician would really mean nothing, Mr. Freericks desired to know why, then, if that were true, in the same breath it was stated that the 100,000 physicians of this country would vigorously oppose the bill with that clause in it. If it meant nothing, why would they oppose it with might and main? Again, if this provision to keep such prescriptions open to the supervision and inspection of Federal and State officials meant nothing, why put it in the bill with reference to pharmacists and not to dispensing physicians?

Mr. Freericks closed his remarks by saying that he would not attempt to answer all of the criticisms made, as it would take too much time. But those who were really interested in this subject, and would like to have a law that would be a public benefit, and who would not like to see the retail drug trade of this country put in the mire with reference to this question, he hoped would consider the last few points he had made.

Mr. Wallace, seconded by Mr. Woodruff, moved that the Section now proceed with the regular program, and this motion was put to a vote and carried.

The Chair said he would appoint as the Committee provided for in connection with Dr. Taylor's resolution, presented at the morning session, the following: J. C. Wallace, of Pennsylvania; H. B. Mason, of Michigan, and C. F. Nixon, of Massachusetts.

The Chair stated that the Section had before it a paper on "Drug Products—The Law and the Label" by Louis Emanuel, but the author was not present.

Thereupon, Mr. Wallace, seconded by Mr. Richardson, moved that the paper be read by title, and referred, and this motion prevailed.

The next paper called for was entitled "Some Phases of a Pharmacist's Duty to the Public," by Miss Zada M. Cooper, which was read by the author.

On motion of Mr. Wallace, seconded by Mr. Nitardy, the paper just read was ordered received and referred for publication.

At this point, the Chair stated that Doctor Lyman, of Nebraska, had sent him a paper entitled, "The Trend of Modern Medicine," which had been received too late to get the title of the paper on the program. He stated that Doctor Lyman had asked that a motion be made that his paper be read by title only, and take the usual course.

Mr. Wallace so moved, and the motion was seconded by Mr. Richardson and carried.

A paper on "Pharmacy in California in 1913," by Fred I. Lachenbach, which the Chair said had been handed to him by General Secretary Beal, was, on motion of Mr. Wallace, seconded by Mr. Richardson, received and read by title, and referred to take the usual course.

Doctor Stewart requested that a paper he had prepared on the subject of "Some Objections to Materia Medica Standardization with Reference to the U. S. Pharmacopoeia," be read by title and referred, and on motion of Mr. Wallace, duly seconded, it was so ordered.

At this point, Mr. Wallace suggested that the hour was now 11:30 p. m. nearly midnight, and he would like to move that the rest of the papers, unless there was someone present who had something unusual to present, be read by title and referred for publication, this motion to include the report on "Patents and Trademarks," which had been referred to this Section for discussion. He said this motion was meant to include all papers, with the exception of one contributed by Doctor Schneider.

Doctor Schneider requested that his paper, entitled "Suggestion on Qualifications to Teach in Colleges of Pharmacy," be referred to the Conference of Pharmaceutical Faculties, but the Chair suggested that he thought it would properly come before the Joint Session of the Section on Education and Legislation with the Conference of Pharmaceutical Faculties tomorrow morning at 10:30 o'clock, and it was so ordered.

Mr. Craig, seconded by Mr. Wallace, moved that the reports of the Committees on Patents and Trademarks and Drug Reform, be referred to the House of Delegates, and it was so ordered.

Election of officers was called for as the next order of business.

On motion of John C. Wallace, seconded by W. S. Richardson, nominations were closed, and the Chairman was instructed to cast the ballot of the Section for the nominees presented at the morning session, as follows:

Chairman, Hugh Craig; *Secretary*, Frank H. Freericks; *Associates*, Miss Clarissa M. Roehr, E. C. Marshall and R. A. Kuever.

The installation of officers was called for as the final order of business, and Chairman Teeters said he wished to take this occasion to assure the members that he appreciated very highly the honor of having been Chairman of this Section during the past year. He said it gave him unusual pleasure to turn over the gavel to a man of Mr. Craig's ability, as demonstrated in his editorial capacity.

Mr. Craig interrupted to interpose an objection here, on the ground that he did not think the time for the installation of officers had come, as the Section still had to consider the report of the Committee on Chairman's Address for this year. He thought this should come under the old administration, where it naturally belonged. He raised a question of personal privilege, as to whether this should be "shouldered onto him, when it was absolutely unconstitutional to do so with a lot of unfinished business on hand."

Mr. Wallace made the point that Mr. Teeters was Chairman until the close of the present meeting.

Mr. Teeters here stated that the report of the Committee on President's Address could not be made at this time, because the Committee had not been able to get together this afternoon, and they could not make their report until the Joint Session tomorrow morning.

Thereupon, upon motion duly made and seconded, the Section stood adjourned.

THIRD SESSION—THURSDAY MORNING, AUGUST 21, 1913.

The Joint Session of the Section on Education and Legislation with the American Conference of Pharmaceutical Faculties and the National Association of Boards of Pharmacy was called to order in Room "A", of the Masonic Grand Lodge, by Chairman Teeters, of the Section on Education and Legislation, at 10:30 a. m.

The Chair called for unfinished business as the first order, and stated that the Session had before it a paper from the Section on Education and Legislation which had been referred to this Joint Session last night. This paper was one by Prof. Albert Schneider, entitled, "Suggestions on Qualifications to Teach in Colleges of Pharmacy," and he would ask Prof. Schneider to present his paper, which he did.

This paper was discussed by Messrs. Alpers and Lowe, and referred for publication.

The Chair stated that, under the head of unfinished business, the report of the Committee on Chairman's Address would be heard at this time, and he called Associate Craig to the Chair while that was being done.

Chairman Wallace, of the Committee, presented his report as follows:

REPORT OF COMMITTEE ON CHAIRMAN'S ADDRESS.

Your Committee have carefully considered the very excellent address of the Chairman, together with the recommendations attached thereto, and heartily approves of recommendation No. 1, which is as follows:

"That we favor the passage of honest advertising laws."

As to recommendation No. 2, which is as follows:

"We urge that Colleges of Pharmacy extend within reasonable limits their sphere of usefulness to include the great field of general education and public service."

We approve of the principle contained in the recommendation, but feel that only such colleges as receive State aid would be in a position to carry it out.

JOHN C. WALLACE,
CLARISSA M. ROEHR,
GEO. M. BERINGER.

Action was called for on the report just read, and on motion of Mr. Beal, duly seconded, the report was adopted, and the recommendations contained therein were approved and referred to the House of Delegates for further action.

Chairman Teeters resumed the chair, and stated that this concluded the business of the Section on Education and Legislation, and suggested that a Chairman and Secretary of the Joint Session should be elected at this time.

Mr. Beal moved that William Mittlebach, President of the National Association of Boards of Pharmacy, act as Chairman of this Joint Meeting, and that the Chairman of the Conference of Pharmaceutical Faculties and the Chairman of the Section on Education and Legislation act as Vice-Chairmen of this meeting. This motion was seconded by Doctor Anderson and carried.

Mr. Mittlebach took the Chair, and thanked the members for the honor conferred. He stated that the National Association of Boards of Pharmacy had adjourned to take part in this Joint Session, but it still had a little unfinished business on hand, which it would like to complete before the afternoon session. He said he thought the Boards could finish this business in half an hour.

Mr. Beal said he was reminded that this Joint Session should have a Secretary, and he nominated Mr. Freericks for that position. This motion was seconded by Doctor Anderson, nominations were closed on motion of Mr. Raubenhaimer, and Mr. Freericks was duly elected.

Chairman Mittlebach stated that the report of the Committee on the resolutions offered by Doctor Taylor, of New York, might be received at this time.

Mr. Wallace, Chairman of the Committee, stated that the resolution had been introduced at a late hour last night, and the Committee was unable to have a meeting, as they could not find Mr. Nixon; and furthermore, the material that came to the Committee seemed to be of an indefinite character, and the Committee did not feel that in the length of time at their disposal they could undertake to prepare a program for the Section on Education and Legislation, or to prepare a plan for the discussion of a prerequisite clause, and they desired, therefore, to return the resolution to this body, with these remarks.

Doctor Rusby moved that the verbal report of the Committee be received, and

that the Committee be continued for consideration of the resolutions in question, and bring in a report at next year's meeting.

Mr. Mason, of the Committee, here interposed to say that he would be glad to be continued on the Committee, but he confessed he did not know what was expected of the Committee. It had been utterly impossible, he said, for the Committee to tell, from the language of the resolution, what was expected of them. If anyone could "clarify the atmosphere," he said, they would be very glad to act in the matter.

Doctor E. A. Ruddiman here seconded the motion just made.

Dr. Henry Kraemer suggested that the resolution might be taken up for discussion, and thus develop whether it would be worth while to continue the Committee. He expressed the hope that the motion would not prevail, as this paper had been presented before the Boards of Pharmacy a few days ago, and it was expected by those interested that it would be discussed here this morning. He, for one, would like to discuss it.

Doctor Taylor said he was thoroughly in favor of Dr. Rusby's motion, that the Committee be continued, with power to do what they were instructed to do. He expressed the opinion that there need be no "atmospheric conditions" that needed clearing up. He thought the Committee might be instructed, and given a year in which to do the work under discussion. The question involved a paper that had been presented a few days ago, and to which reference had been made, and another paper that had been presented quite late at last night's session—hours after it was contemplated that it would be presented. It had then been referred to a body that knew nothing about it, and naturally that body had to be instructed this morning as to what their plan should be, and what was involved in the proposition. "Unfortunately," he said, there was a time-limit to human endeavor, and it was difficult to make a plan at 10 o'clock in the morning that should have been in force at eight o'clock the night before." The resolution offered last night read as follows:

"That a Committee of Three be appointed by the Chair to formulate a plan for discussing at the Joint Session of the Section on Education and Legislation, Conference of Pharmaceutical Faculties and National Association of Boards of Pharmacy, Thursday morning, this paper."

Continuing, Doctor Taylor went on to say that he was trying to discuss the question here of the continuation of a Committee appointed to formulate a plan. That plan was, to help pharmaceutical education throughout the United States, "by bringing together three forces now in existence, and directing them as a unit against the forces that may be wrong."

Doctor Taylor said he would, in short, bring together the combined forces of the American Pharmaceutical Association, the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties, to overcome the forces of ignorance and darkness which had been at work since the world began. He closed by expressing the hope that this Association would properly instruct a Special Committee, and give its members a year in which to formulate a plan to bring about the elevation of pharmacy, by bringing into every State in the Union a prerequisite clause, which should require a secondary course of some character for admission to a professional course of some length.

before the applicant should be admitted to the examinations set by the State Boards.

Prof. Kraemer said that it seemed to him that it was properly a question of standardization of pharmaceutical education that was involved here, and he moved to amend Dr. Rusby's motion to the effect that this paper be referred to the Conference of Pharmaceutical Faculties for action.

Doctor Anderson seconded Mr. Kraemer's motion.

Doctor Rusby said that it seemed to him that the peculiar value of the study which this Special Committee was asked to make during the next year consisted in having the combined knowledge and judgment and experience of the three bodies, the Boards of Pharmacy, the Conference of Faculties, and the Section on Education and Legislation. He thought that while a conference of the character of that now in session could decide the thing from the view-point of its members, there would be additional value in a study of this kind being presented to this joint body next year, so that all three of its divisions could take part in the discussion and come to some proper conclusion.

Otherwise, it was quite possible for one of these bodies to reach a conclusion that the other two would differ with. He illustrated this with the case of the Syllabus Committee, where a motion to incorporate was unanimously adopted by one body and rejected by the other. He believed that a matter of this kind, which involved teaching, and examination by State Boards, and possibly the matter of legislation, should be discussed by all these bodies. For this reason, he expressed the hope that the amendment just proposed would be voted down.

The motion of Mr. Kraemer was then put to a vote and lost.

Mr. Beringer here suggested that the Joint Session was considering some very indefinite language, and wanted to know what "plan" was meant. He would like to have it definitely understood what was being referred to this Special Committee.

Doctor Taylor made this characteristic response: "If I understand the inquiry it is, What is this plan for? There is no plan. It is up to this Committee to formulate a plan. This is simply to get a Committee to make a plan. What are they to plan for? A sky-scraper? No. A subway? No. They are to plan a campaign, which should unite these forces here assembled into helping the States that have no prerequisite law to get one."

At this point, Mr. Hynson, to the merriment of his auditors, was moved to say that if this proposed "plan" was to be worked out by a Special Committee "composed of Wallace and Mason, it was likely to turn out a Rathskeller!"

Dr. Good here moved to lay the Rusby motion on the table, and he was seconded by Mr. Beringer, but the motion was lost.

Thereupon, Dr. Rusby's motion to continue the Special Committee, for the purpose of considering the proposed plan of bringing about the enactment of a prerequisite law in the States not having same, and to report back to this body at the next annual meeting, was put to a vote and carried.

The report of the Syllabus Committee was called for, and was made by W. G. Gregory, of the Committee. (See September JOURNAL p. 1080.)

Action was called for on the report just read, and on motion of Dr. Ander-

son, duly seconded, it was ordered received and referred to the general session of the American Pharmaceutical Association.

Mr. Beringer said that it was very unfortunate that a paper of this sort should be read and printed in the proceedings without being discussed, and he moved to amend the motion to refer, to the effect that both the report and its discussion be referred to the next annual meeting.

This motion was duly seconded and carried.

There being no further business before the Joint Session, on motion, duly seconded, the session stood adjourned *sine die*.

RELATION OF THE A. PH. A. TO OTHER ORGANIZATIONS.

The first to exist (the A. Ph. A.) is the last national association to be considered, because of its immense importance to all the others and because of the transcendent possibilities it offers the others. It seems to have been *ordained* to fill a most important mission. The remarkable part it has played in the formation, encouragement and guidance of other national and local organizations is both unique and most creditable. The most wonderful characteristic of the old A. Ph. A. has been its adaptability and elasticity. It fully met the demands for which it was created, has ever found time to meet the requirements of the moment and has effectively given the assistance necessary to further the formation of other needed organizations.

These accomplishments of the American Pharmaceutical Association are on record, are a part of its interesting history and beyond dispute. How differently the worth of an organization is valued when it is estimated by its true history, rather than by the individual of any generation. But no matter what it *has* done, in truth or in error, it stands today able and ready to help; full of splendid possibilities for the peace, the comfort and the greater happiness of all sorts and conditions of pharmaceutic flesh.

The other associations are no less important because the A. Ph. A. is vitally important to each of them. It is all the more important because of its distinct catholicity, which shelters, binds and develops all classes of pharmacists. Mark this catholic nature and let it forbid and prevent even the semblance of rivalry and jealousy—let it present, as it should, the open door to all kinds and conditions of pharmaceutic consultation, conference, arbitration and adjustment; the open door; the welcoming hand.

The other associations have specific and quite properly circumscribed opportunities; those of the A. Ph. A. are boundless and undefined. Yet, withal, its most potent possibilities are described under three heads: (a) Opportunity for personal contact of similarly interested minds; occasion for the acquaintance of leaders with leaders and the meeting of followers with followers; (b) the opportunity for the conception, development, refining and useful application of knowledge; knowledge that gives power and ability to help humanity; the golden harvest that really enriches; (c) it is the pharmaceutical "clearing house," most appropriately so called, wherein the representatives of all and every organization may be heard and helped.—*Druggists Circular*.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SECTION ON PRACTICAL PHARMACY AND DISPENSING.

FIRST SESSION—WEDNESDAY AFTERNOON, AUGUST 20, 1913.

The first session of the Section on Practical Pharmacy and Dispensing was called to order at 2:45 o'clock p. m. in room "B" of the Masonic Grand Lodge, by Chairman J. Leon Lascoff. The Chairman stated that Associate Osseward, of Seattle, was not present, and he had asked Mr. Becker, of Chicago, to take his place. He thereupon called upon Secretary F. W. Nitardy to take the Chair, while he presented his Address. (See September JOURNAL, p. 1118.)

On motion of Mr. Needham, of Texas, duly seconded, the Acting Chairman was authorized to appoint a committee of three, to consider and report at the next session upon the recommendations of the Chairman's Address, and the following were named as composing the Committee: Messrs. R. H. Needham, of Texas, H. P. Hynson, of Baltimore, and William Mansfield, of New York.

Mr. Lascoff resumed the Chair, and said the reading of papers was now in order. The first paper called for was one entitled, "The Most Difficult Things to Learn in Dispensing," by H. P. Hynson, of Baltimore.

Mr. Hynson, by way of gentle allusion to his natural interest in this Section, as the "daddy" of it, said that he did not mind pleading guilty to a little sentiment once in a while, and that while he had demurred to writing a paper when called upon, he had agreed to "help out" if his aid was needed, and this was the result of that agreement. He pleaded guilty also to being "a little tickled" that the Chairman had placed his paper first on the program. He added, after reading his paper, that after all he supposed the most difficult thing to learn in dispensing was really to learn to dispense.

The paper was then discussed by Messrs. Fennell and Raubenheimer, and referred for publication.

The next paper called for was one on "Canadian Balsam of Fir," by J. H. Beal, which subject Mr. Beal proceeded to present in brief verbal abstract.

This subject was discussed by Messrs. Fennell, Raubenheimer, Pease, Kebler and Beal.

A paper on "Do Physicians Understand the Fundamentals of Prescription writing?" was presented by R. H. Needham, of Texas.

The paper just read was discussed by Messrs. Fantus, Fennell, Nitardy, Carter, Mayo, Gordon, Alpers. A motion made by Dr. Fantus to appoint a Committee to make an investigation regarding the examination of applicants for the right to practice medicine in prescription-writing, and the extent to which prescription-writing is taught in medical colleges in this country, and also the extent

to which medical examining boards inquire into the thoroughness with which candidates have been prepared for prescription-writing, which was seconded by Dr. Carter and Mr. Mayo, was, on motion of Mr. Seltzer, duly seconded, laid upon the table.

Prof. Scoville, at the request of the Chair, read a paper on, "A Prescription and a Query," in the absence of the writer, A. W. Bender, of Philadelphia.

This paper was discussed by Messrs. Payne, Fennell, Alpers and Becker, and referred for publication.

A paper entitled, "The Necessary Apparatus In a Reputable Prescription Pharmacy," was read by F. W. Nitardy, in the absence of the writer, Jeannot Hostman, of New York.

This paper was discussed by Messrs. Raubenheimer and Nitardy, and referred to take the usual course.

Secretary Nitardy also read a paper by Franklin M. Apple, of Philadelphia, entitled, "Practical Hints of a Dispenser."

The paper was referred to take the usual course.

A paper entitled, "The Value of Vegetable Drugs to Pharmacists and Physicians" was presented verbally by William Mansfield, who, in company with Dr. Rusby and Prof. Schneider, and under the guidance of Prof. Rudolph, of Vanderbilt University, had made a collection of some fifty or more samples of drug plants, indigenous to this section, since this meeting began. He exhibited and described thirty specimens of drug plants collected in the neighborhood of Nashville.

On motion of Mr. Fennell, seconded by Dr. Payne, a rising vote of thanks was tendered to Dr. Mansfield for his interesting presentation of his subject.

A paper on "Lotio Alba Demonstrated with Samples," was presented by Otto Raubenheimer, the author.

The paper just read was discussed by Messrs. Fennell, Dunning, Wilbert, Puckner and the author, and, after a vote of thanks had been extended to Prof. Raubenheimer, on motion of Mr. Fennell, seconded by Mr. Wilbert, the paper was referred for publication.

F. W. Nitardy read a paper on, "Suspension of Calomel," and exhibited samples illustrative of the text of his paper.

The paper was discussed by Messrs. Dunning, Raubenheimer, Fantus, Wilbert, Windolph and the writer, and referred to take the usual course.

The Chair stated that the selection of a Nominating Committee was now in order, and he appointed the following as such Committee: Messrs. H. A. B. Dunning, of Baltimore, Otto Raubenheimer, of Brooklyn, and J. G. Godding, of Boston.

The Chair then called on Mr. Nitardy to read his paper on, "A Good Finish for Prescription and Laboratory Table Tops."

The paper was discussed by Messrs. Raubenheimer, Becker, Dunning and Wilbert, and referred to take the usual course.

On motion of Mr. Raubenheimer, seconded by Mr. Wilbert, an adjournment was then taken until Thursday afternoon, at 2:30 o'clock.

SECOND SESSION—THURSDAY AFTERNOON, AUGUST 21, 1913.

The Section was called to order at 2:30 p. m., in room "B" of the Masonic Grand Lodge, by Chairman Lascoff, who stated that, without objection, the reading of the minutes of the first session would be dispensed with, and it was so ordered.

The report of the Nominating Committee was called for, but Chairman Dunning was not present, and it was passed for the time being.

The report of the Committee on Chairman's Address was presented by Mr. Needham as follows:

REPORT OF COMMITTEE ON THE CHAIRMAN'S ADDRESS.

1. We indorse the President's suggestion that pharmacists take notes of matters of interest, especially of "flaws in his profession," and communicate this information to the members of the Association.

2. We heartily indorse the President's recommendation that State Laws shall be enacted which will prevent any one owning a drug store, except licensed pharmacists; that in small towns or villages the legislatures should prohibit the groceries or general stores from handling poisonous or deleterious drugs and chemicals.

3. We recommend that the New York plan, requiring that pharmacists shall possess certain weights and measures, be adopted by other states, as suggested by the President.

4. We indorse the President's suggestion concerning sanitation in the prescription room.

5. We indorse the President's suggestion that pharmacists be certified and that if this be done "The pharmacy" will be distinct from "The drug store."

6. We agree with the President's suggestion that all poisons be kept and dispensed in bottles having a distinctive form and color.

Respectfully submitted,

R. H. NEEDHAM, Chairman,
HENRY P. HYNSON,
WILLIAM MANSFIELD,
Committee.

Mr. Raubenheimer moved that the report of the Committee be accepted, and expressed the hope that the Association would take this matter in hand and do something about it.

This motion was seconded by Dr. Fantus and carried.

At request of the Chair Mr. Raubenheimer here presented his paper entitled, "Shape and Color of Tablets for External Use."

The Chair stated that Mr. Raubenheimer always wrote papers of great interest, and he hoped there would be some discussion on this paper.

The paper was discussed by Messrs. Mayo, Nitardy, Windolph, Mittlebach and the writer, and, on motion, referred to take the usual course.

The Chair called on Prof. Albert Schneider, of San Francisco, to present what he said was a very interesting paper on "Some Practical Microscopical and Bacteriological Work for the Pharmacist." Prof. Schneider said he had no written paper, but would present verbally what he had to say.

The subject presented by Prof. Schneider was discussed by Messrs. Mayo, Fantus and Windolph, and referred to take the usual course.

The Chair then called on Dr. Barnard Fantus for his paper on "The Making of Tablets by the Retail Druggist."

The paper was on motion, received and referred for publication.

At the request of the Chair, a paper entitled, "Some Additional Sources of Error in the Chemical Examination of Urine," by J. L. Mayer, of New York, was read by Mr. Raubenheimer, in the absence of the writer.

The paper last read was discussed by Messrs. Raubenheimer, Needham and Becker, and referred to take the usual course.

The report of the Nominating Committee was presented by Chairman Dunning as follows:

Chairman, F. W. Nitardy; *Secretary*, Cornelius Osseward; *Associate*, Irwin A. Becker.

Mr. Mayo moved that the report be accepted and adopted, and that the stenographer be instructed to cast the affirmative ballot of the Section, electing the gentlemen named to the offices designated. Other nominations were called for, but none were offered, and Mr. Mayo's motion was put to a vote and carried. The stenographer cast the ballot as directed, and the Chair declared Mr. Nitardy elected as Chairman; Mr. Osseward as Secretary, and Mr. Becker, as Associate.

Chairman Lascoff here read his paper on "Camphorated Oil in Ampoules, Simple Apparatus for Filling" (with Demonstrations).

This paper was discussed by Messrs. Mayo, Raubenheimer, Dunning and Nitardy, and referred for publication.

Thereupon, upon motion made and seconded, an adjournment was taken to Friday morning, at 10:30 o'clock.

ADJOURNED SESSION—FRIDAY MORNING, AUGUST 22, 1913.

An adjourned session of the Section on Practical Pharmacy and Dispensing was called to order in the Assembly Hall of the Hotel Hermitage at 11 o'clock a. m., by Chairman Lascoff, who stated that the first order of business was the reading of the minutes of the previous session.

On motion of Mr. Nitardy, seconded by Mr. Craig, the reading of the minutes was dispensed with.

Mr. Nitardy, at the request of the Chair, read a short paper on, "Liquor Magnesii Citratis," by J. Lee Brown, of Marshfield, Oregon.

This paper was discussed by Messrs. Hynson, Perry, Nitardy and Becker, and referred to take the usual course.

"A Method of Handling Stronger Ammonia Water," a paper by W. R. White, of Nashville, was read by the writer.

Brief discussion was had upon the paper by Mr. Nitardy and Chairman Lascoff, and it was then ordered to take the usual course.

Mr. Craig, at request of the Chair, read a paper on "The Weight of Drops," by Curt P. Wimmer and Leon Roon, of New York.

At the request of the Chair, Mr. Nitardy read a paper entitled, "Practical Pharmacy and System in the Prescription Department," by H. G. Posey, of New Orleans.

There was no discussion on the paper, and it was ordered to take the usual course.

Mr. Craig, at the request of the Chair, read a paper by Ernest E. Jones, of Detroit, entitled "Liquid Shampoos and Toilet Soaps, with Formulas."

The paper was referred without discussion.

A paper on "Facts and Factors in the Practice of Pharmacy," by William J. Lowry, Jr., of Baltimore, was read by Dr. Asher, at the request of the Chair.

This paper was discussed by Messrs. Hynson, Nitardy and the Chairman, and referred to take the usual course.

A paper entitled, "Sprup of Lactucarium," by L. E. Sayre, of Lawrence, Kansas, was read by Mr. Mittlebach, and referred to take the usual course.

A paper on "Counter Prescribing," by Bernard Sacks, of New York, was read by Mr. Moerck, at the request of the Chair.

Mr. Hynson stated that, without the slightest reflection being intended upon the Chairman for his arrangement of the program—for all honored the Chairman for the excellent work he had done—he confessed that he was a little bit jealous as to what came into and went out of this Section, and he thought this paper properly belonged to the Section on Education and Legislation, and moved that it be referred to that Section for consideration at the next Annual meeting. This motion was seconded by Mr. Nitardy and carried.

A paper by Charles H. LaWall, of Philadelphia, entitled, "A New and Satisfactory Formula for Liquor Antisepticus, U. S. P." and also another paper by the same author entitled, "A New and Satisfactory Formula for Liquor Antisepticus Alkalinus," were read by Mr. Hynson, at the request of the Chairman.

A very brief discussion was had upon these papers by Messrs. Becker and Hynson, and they were referred to take the usual course.

The Chair stated that, if there was no objection to it, the remainder of the papers in hand would be read by title, and Mr. Nitardy so moved, which motion was seconded by Mr. Hynson and carried.

The installation of officers elected for the ensuing year was called for as the final order of business, but the Chair said that before this was done, he wished to take this opportunity to thank the members for their uniform courtesy and the good attendance during the sessions of this Section.

He called on Mr. Craig to introduce Mr. Nitardy as Chairman-elect.

Mr. Craig essayed this agreeable office with satisfaction, and in introducing Mr. Nitardy said he had been raised to the Chairmanship of "this, the next to the best Section of the American Pharmaceutical Association—I have been elected to another!" He said that Mr. Nitardy, like himself, was not a veteran, but he had heard him hold forth on practical subjects, and he knew his auditors would agree that he was "one of the best practical men in pharmacy today." He had had experience with local organizations in his own section, and he was satisfied he would conduct the business of the Section with credit to this body and to himself; that he had an acquaintance throughout the country with pharmacists of a practical bent that would enable him to prepare a program that would redound to the credit of the Section for the next year.

Mr. Hynson said that, while he congratulated the Section on its new officers, he also wished to congratulate it upon having had such men to serve it as the retiring officers, and he moved that a vote of thanks and appreciation be extended to them for the successful and creditable manner in which this Section had been handled during the past year. He asked that this vote be a rising one.

This motion was seconded by Mr. Cook, and carried unanimously.

Mr. Nitardy took the Chair, and noted the fact that the Secretary-elect was not present, but said Associate Becker was, and he called on Mr. Craig to introduce him.

Mr. Craig was again equal to the occasion. He said that Mr. Becker was such an unobtrusive gentleman, and lived in such an unobtrusive town—Chicago—that he had not as good an acquaintance with him as with Mr. Nitardy. Mr. Becker, however, had been able to give great thought to the practical side of Pharmacy, and he had put that thought into action. He had the ability to think and the ability to act, and he was certain that he would prove a capable officer of this Section.

Mr. Becker briefly made his acknowledgments.

Chairman Nitardy, in acknowledging the honor conferred upon him in his selection for Chairman, promised to do the best he could to forward the work of the Section. He doubted whether he had had the experience to justify him in hoping to accomplish as much as his immediate predecessor had done. Another thing, he was not in the "stimulating environment of the East," where there were so many practical pharmacists, but away out West, in the Rocky Mountain Region, where pharmacies and pharmacists were scarce. However, with the help of his associates he hoped to make the Section meeting next year a success.

This closed the business of the Section, and on motion of Mr. Mayo, seconded by Mr. Craig, it stood adjourned *sine die*.

EFFECT OF BRITISH INSURANCE ACT ON SALE OF PATENT MEDICINES.

Reports from various districts concerning the experiences of pharmacists of their work under the Insurance Act are by no means unfavorable. In the industrial districts of Yorkshire, where the number of insured persons in proportion to the population is probably larger than anywhere else, pharmacists are not disposed to express discontentment with the effect of the Act, but opinion is divided as to the influence of the operation of medical benefit upon their ordinary business. The experience of a Huddersfield pharmacist is that there has been no falling off in the sale of "patent medicines," but on the other hand, a Halifax pharmacist says, "We have all found a falling off in the sale of patent and proprietary medicines"; while it is stated that at one shop in Bradford the trade in patent medicines and proprietary preparations has declined by three-fourths. The *Lancet*, in a review of the position, says that, especially in industrial centres, the administration of medical benefit has brought about a great change in the character of the chemist's business, and there are indications that in course of time much of the exotic paraphernalia of pharmacy will disappear, and the chemist's shop will become less of a general store and more of a place where pharmacy is practised. With reference to the rate of the pharmacist's remuneration, the *Lancet* says that three month's experience has demonstrated that the extra work which has been thrown upon the chemist is hardly compensated by the remuneration, but the pharmacists are, on the whole, disposed to put on the credit side of the account the improvement in the character of their work, which has been one of the results of the operation of the Act.—*Pharmaceutical Journal*, (London).

Section on Commercial Interests

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SECTION ON COMMERCIAL INTERESTS.

FIRST SESSION—TUESDAY EVENING, AUGUST 19, 1913.

The meeting was called to order by Chairman A. V. Pease, of Nebraska, at 8 o'clock p. m., in the Convention Hall of the Grand Lodge, on Capitol Boulevard.

Associate C. G. Lindvall was asked to take the Chair while Chairman Pease read his Address. (See October JOURNAL, p 1267).

Mr. Day, duly seconded, moved that the Address be received and take the usual course, and it was so ordered.

Mr. Pease resumed the Chair, and introduced to the meeting Prof. F. E. Stewart, of Philadelphia, who delivered a very interesting and instructive stereopticon lecture on "Bacteriological Products."

At the conclusion of Prof. Stewart's lecture, a rising vote of thanks was extended for the excellent manner in which he had dealt with his subject, and the many valuable suggestions contained in it.

The Chair announced that at the session tomorrow evening a very instructive lecture would be delivered on the subject of "Scientific Salesmanship," by Mr. Ben R. Vardaman, of Iowa, and urged everyone to be present.

On motion the meeting adjourned.

SECOND SESSION—WEDNESDAY EVENING, AUGUST 20, 1913.

The second session of the Section on Commercial Interests was called to order by Chairman Pease at 8:20 o'clock p. m., in room "B" of the Grand Lodge. In the temporary absence of Secretary White, W. I. Gates, of Tennessee, acted for him.

The Chairman called for the election of officers for ensuing year as the first order of business, and suggested that it had been customary to elect a Secretary from the place of the next annual meeting, which in this case would be the city of Detroit.

Thereupon, C. G. Lindvall, of Moline, Illinois, was nominated for Chairman by Mr. Main.

Nominations for Vice-Chairman were called for, and Mr. Main nominated L. E. Seltzer, of Detroit, and the name of J. E. Peyton, of Shreveport, La., was also put in nomination. The Chair called for further nominations for Vice-Chairman, but none were offered.

Nominations for Secretary being called for, Grant W. Stevens, of Detroit, was nominated by Mr. Mason.

The Chair stated that before Mr. Vardaman began his lecture, which was the chief feature of interest upon the evening's program, he thought it would be

well to have a little discussion as to the relative importance of the Commercial Section in the work of the Association. "Shall this Section be entirely swamped by the professional side—the scientific side of pharmacy?" asked Mr. Pease; "or shall the Commercial Section be made alive, and made a real marker for the professional side of the Association?" He called on Mr. Holzhauer to say something on this subject.

Mr. Holzhauer said he thought this Section was of far more importance to the retail trade than the Scientific Section. That Section was all right, of course, but without the commercial end of the business the scientific side of it could not live. There would be no use for the latter if it were not for the former to give the science of pharmacy practical application. It was the commercial side of the business that furnished the dollars and cents to make the wheels turn. He was decidedly of the opinion that this Section ought to be considered one of the most important of the whole Association. He thought it would be a great mistake to crowd it out. The very object had in view when this Section was organized was to give opportunity for commercial matters to be threshed out more thoroughly in a separate Section, where all the time necessary could be given to them. When it first started, the Section had been allotted two or three sessions, and it was the understanding, as he recalled, if it worked to advantage it was to have more time—more time than was being allowed it now.

Mr. Main said he had always stood for the Commercial Section. He believed with Mr. Holzhauer that it was one of the most important, if not the most important, divisions of the American Pharmaceutical Association. Any pharmacist who regularly attended the meetings of this Association should, if he used his opportunities not only get a better idea of the scientific side of his profession from coming in contact with the teachers from the colleges and the men engaged in scientific research work, and from hearing their papers read and discussed, but he could get information enough from the retail druggists of the country, gathered together in the city where the meeting was held, to repay him for his time and trouble in coming to the meeting. He meant to combine with this, of course, the knowledge he would obtain from attending the sessions of the Commercial Section. Mr. Main said he considered the Commercial Section of the utmost value, and he thought it would be a sad day for the American Pharmaceutical Association when this Section was minimized, or put any more in the background than it was at the present time.

The Chairman asked: "Where are we to expect an increase in the membership of the Association to come from—from what source?" Mr. Main replied: "From the live men in the business, who are striving to advance their business interests."

Mr. Main then went on to say that he thought the custom of the Association of visiting different parts of the country in its annual meetings, thus coming in direct contact with the local druggists of the various communities, was of great value to the retail druggists. He himself had rarely come away from one of these meetings without bringing with him many valuable ideas, which, were he engaged in the retail business at this time, would be very valuable to him. He was always fond of telling the things he had heard and learned, he said,

before local meetings of druggists he attended from time to time, where they had the pleasure of gathering and talking to one another freely.

William E. Danhauer, of Owensboro, Ky., was the next speaker, and said that he was a retail druggist, and naturally looked to the Commercial Section for help in his business. He was not interested in college work at all, or the matters in which the college men were interested. He was interested in making a living, and he wanted the Commercial Section to help him to do it. He agreed with the speakers who had preceded him, that this Section should be regarded as one of the most important in the whole Association. From what he saw here, it was evident that the other Sections were drawing the interest of the members. This ought not to be true, but nevertheless it was, and the fact might as well be looked in the face. Like Mr. Main, he said he had never gone to a meeting of this sort but that he had brought back ideas that he could use in his own business. He might have a problem that had been worrying him all of his drug life, and would find at some meeting that some other man had solved that problem. On the other hand, he might have solved some question that had been worrying some other man. He said that he had no doubt that a large majority of the two thousand and more members of the American Pharmaceutical Association came from the ranks of the retail druggists, and there was every reason why the Commercial Section, which particularly represented their interests, should be looked upon and treated as a very important Section.

A. B. Anderson, of Vermont, said that, like the gentleman from Kentucky who had just spoken, this was his first experience in attending one of the annual meetings of the Association, and he was naturally more interested in this Section than in any other. He agreed that it was an important Section, as particularly representing the interests of the retail trade.

Chairman Pease said he thought perhaps every man in the room felt that the Commercial Section was the "heart of the Association," and he thought the members generally should realize that fact. It had seemed to him worth while to have this discussion, in order to make this fact plain, and to point out to the Association, to the membership in general, that its very life depended largely upon the commercial end of the business; that the growth of its membership and income depended on the rank and file, and not on the men who taught, or the men who were engaged in scientific research. He was so strongly impressed with this view, that he believed in the highest possible development of the commercial side of pharmacy, for where there was a large amount of interest on the commercial side there was the best opportunity for professional interest. This Section should be made very strong, said the Chairman; and in pursuance of this idea, and from personal acquaintance and knowledge of the man, he had invited to lecture here to night upon the subject of "Scientific Salesmanship," a man noted for the skill and force with which he handled that subject. Without further ceremony, therefore, he said he now wished to present to the Section Mr. Ben R. Vardaman, of Des Moines, Iowa, who would now address the members upon this subject.

Mr. Vardaman, before proceeding to deliver his address, stated that he had received an invitation from the Committee to attend this meeting a year ago, and had told his secretary, who had charge of his booking, that he wanted his

schedule arranged so that he could be here. He told a good story to illustrate why he particularly desired to be present on this occasion, and said that when Chairman Pease wrote him there was going to be a lot of pharmacists gathered here from all over the country, he was "sure that something was going to happen, and he wanted to be here and see it when it happened." He then proceeded with his lecture, which took up, practically, the remainder of the session.

After Mr. Vardaman had concluded his lecture, Chairman Pease said he did not believe there was a man present who had heard this lecture that did not feel that he could go home and make profit enough to make his expenses, and more than his expenses, to this meeting.

Dr. Lowe said if he were not out of the retail business, he would go home and try to follow out some of the things he had heard here tonight.

The Chair called on Mr. Lowe, of Philadelphia, to read a paper he had prepared on the subject, "The Causes That Lead to Success or Failure in Pharmacy."

There was no discussion of this paper, and it was received and referred for publication.

The Chair said he realized that all were tired after the strenuous time they had had, and if there were no suggestions to make on the "Question Box," the last item on the program, he would consider the meeting adjourned.

TELEPHONE COURTESY.

First impressions of men—and of a store—often outweigh much second-thought and argument. A good impression, in business, may mean the winning of a good customer. A bad impression—the result, perhaps, of only a little thoughtlessness, carelessness or lack of consideration—may on the other hand, be sufficient to undo the work of quite a lot of good advertising.

The use of the telephone in business is so great a convenience for the store and its customers today that the way in which telephone business is handled has come to be of very great importance. In the drug business, in particular, it is over the telephone in many cases that the store's first impression is made. The advantage, therefore, of prompt and courteous telephone service is at once apparent.

It requires a certain amount of patience, of course, for most 'phones have the knack of ringing just when a telephone call is the very last thing you want to be bothered with. Remember, however, that a telephone customer at the other end of the line is unlikely to make the allowance for delay that a customer at the counter may be willing to do.

If you are busy for the moment the one has an opportunity to see that you are busy, and may find something of interest at hand to offset the little delay; the other can only wait, become impatient, fume, and finally wonder why in the world her druggist doesn't pay better attention to his 'phone.—*Western Druggist*.

Section on Historical Pharmacy

Papers Presented at the Sixty-First Annual Convention

MINUTES OF THE SECTION ON HISTORICAL INTERESTS.

FIRST (AND ONLY) SESSION—FRIDAY MORNING, AUGUST 22, 1913.

The first (and only) session of the Section on Historical Interests was called to order at 11 o'clock a. m. in Room "A" of the Grand Lodge, by Chairman John G. Godding, of Boston. There were present also of the committee, Frederick T. Gordon, of Philadelphia, Secretary, and Caswell A. Mayo, of New York, Historian.

Chairman Godding requested Mr. Gordon to preside while he read his address. (See October JOURNAL, p. 1271.)

The Acting Chairman stated that it was customary to appoint a committee of three to consider and report upon the address of the Chairman, and said he would entertain a motion to that effect. Mr. Bradley, of Boston, said he thought no one in the room would oppose the recommendations made in the address, and so the matter was passed.

Mr. Raubenheimer called attention to the fact that this was the first time in the history of pharmacy that an International Congress of Pharmacy has solicited papers on historical pharmacy, and the American Pharmaceutical Association being the first Association which had a Section on Historical Pharmacy, he thought it was eminently proper that it should be sent to the International Congress, as recommended by the Chairman in his address, the paper by Dr. Alpers referred to.

The Acting Chairman said he was glad Mr. Raubenheimer had mentioned this matter, because the Section would have to take some action on it.

A vote was then taken on the reception of the address of the chairman, and it was so ordered.

Thereupon the Acting Chairman said it was now in order to make a motion that this Section approve of the recommendation made by the Chairman, that the American Pharmaceutical Association send as its contribution to the International Pharmaceutical Congress at The Hague the History of the American Pharmaceutical Association, prepared by Dr. Alpers, and to refer this request to the Association in general session.

Mr. Raubenheimer so moved, and the motion prevailed.

Mr. Godding resumed the chair, and called for the report of the Historian, which Mr. Mayo proceeded to make, exhibiting a copy of the French publication, collection of snap-shots taken at the Denver meeting, etc., referred to in his paper.

The Chair stated that, without objection, the report of the Historian would be received to take the usual course.

Mr. Wilbert said it was very seldom that Mr. Mayo "let anything get by him," but he wished to call his attention to an exhibit at the International Medical Con-

gress in London last month—an exhibit of historical medical objects, organized by Henry S. Wellcome, which reproduced many of the older medicaments. He urged that delegates to The Hague convention should not fail to visit this exhibit.

Mr. Mayo apologized for this omission. This was one of the most interesting things from a historical point of view that had occurred for sometime, he said, and Mr. Wellcome had shown great interest in this subject. The photographs of old mortars were very interesting; also those of old shelfware in various types of bottles. Mr. Wellcome, he said, really had one of the finest historical pharmaceutical collections of any man in the world.

The Chair stated that, without objection, the report of the Historian would take the usual course, and it was so ordered.

The report of the Secretary was called for, and Mr. Gordon made his report.

The Chair stated that, as there were no recommendations in the report of the Secretary, it would, without objection, take the usual course, and it was so ordered.

The nomination of officers was called for as the next order of business, and Dr. William C. Alpers, of New York, was nominated for Chairman by H. V. Army, who spoke of him as a man deeply interested in the history of pharmacy. This motion was seconded by Messrs. Wilbert and Anderson, and on motion of Otto Claus, nominations for Chairman were closed.

The Chair thereupon put the vote on the election of Dr. Alpers as Chairman of the Section on Historical Interests for the ensuing year, and it was carried unanimously.

Dr. Alpers thanked the members most heartily for the honor conferred on him, which he said had come to him very unexpectedly. He had some doubt as to whether he could accept, as his plans were somewhat unsettled; but said that if he could serve he would do his best to keep the Section on the same high plane it had been conducted on by former Chairmen.

Nominations for Secretary were called for, and Frederick T. Gordon was nominated by Hugo Kantrowitz, and the nomination seconded by H. V. Army. Nominations were closed, and Mr. Gordon was unanimously elected.

Mr. Gordon expressed his thanks for the honor conferred, but said the members had voted him "a good, hard job."

New business was called for as the next order, but none was offered.

The Chair announced that the reading of papers was now in order, and he would call on Dr. Alpers to read his second installment of the History of the American Pharmaceutical Association.

Before proceeding to read his paper, Dr. Alpers stated that it was, in the very nature of things, quite a long one, and as the time of the Section was somewhat limited, he would pass over certain parts of it that he did not deem especially important—such as those portions referring to foreign associations, British, German, etc.—and confine his reading to those portions having a direct bearing on the history of the American Pharmaceutical Association. He explained that the age of the Association did not tally with the running numbers of the meetings; that this was known as the sixty-first annual meeting, whereas the Association was really sixty-three years old. The reason for this discrepancy was that the first meeting was usually mentioned as the preliminary meeting of the Associa-

tion, and there was no meeting held at St. Louis in 1861, as intended, on account of the Civil War. He thought this would account for the fact that while the Association was really sixty-three years old, the number of the present meeting was only sixty-one.

This paper was discussed by Messrs. Remington, Arny, Huested and Alpers, and on motion of J. P. Remington, seconded by H. V. Arny, a special vote of thanks was extended to Mr. Alpers for his excellent work in this behalf.

Dr. Alpers explained that if this paper was to be presented at The Hague Congress as a contribution from this Association, as contemplated in the recommendation of the Chairman in his address, which recommendation had been adopted, it would be necessary to recopy it and put it in somewhat different form, as it could not be presented properly in its present form, and that this, of course, would involve some expense, though not a great deal.

Mr. Gordon said that as he understood this resolution was to be referred to the House of Delegates, and if the House of Delegates approved the Council would probably authorize the necessary expenditure.

Prof. Remington suggested that anything coming from the House of Delegates requiring an outlay of money must be approved by the Council, and he would be glad to make the necessary motion in the council as to this expense.

The Chair stated that he thought the necessary revision of this paper could be safely left in the hands of Dr. Alpers, the author.

Thereupon the paper was received and ordered to take the usual course.

The next paper called for was one by Dr. Lyman F. Kebler, of Washington, D. C., on the subject of the "Evolution of the Tablet Industry," which the author presented in extended verbal abstract.

Dr. Kebler's paper was discussed by Messrs. Mayo, Lloyd, Raubenheimer and the writer, and, on motion of Mr. Mayo, seconded by Dr. Lloyd and Mr. Raubenheimer, the thanks of the Association were extended to Dr. Kebler for this admirable compilation, and the manner in which he had presented his subject. The paper was then received and referred for publication.

A paper entitled "Biographical Sketch of Dr. John King," by John Uri Lloyd, was read by title, at request of the author.

Two papers by Otto Raubenheimer, one entitled "Centenary of Iodine," and the other "Centenary of Men Famous in Pharmacy," were read by title, at request of the writer.

A paper entitled, "History of Albany College of Pharmacy," by A. B. Huested, was also read by title, at the request of the author, and referred for publication.

The following papers were, in the absence of the writers, also read by title and referred for publication: "Pharmaceutical Chronology, 1700 to 1913," by J. L. Llewlyn; "History of Massachusetts Pharmaceutical Association," by E. C. Marshall; "History of Maine Pharmaceutical Association," by A. G. Schlotterbeck.

The Chair stated that the last-named paper was a very interesting document, inasmuch as it was written by the only survivor of the organizers of the Maine Pharmaceutical Association.

This concluded the business before the Section, and Mr. Mayo, in moving to adjourn, included a vote of thanks to the retiring officers. The motion prevailed, and the Section adjourned to meet again in 1914.

Contributed and Selected

THE PHYSIOLOGICAL ACTIVITY OF VARIOUS PHARMACEUTICAL PREPARATIONS OF ERGOT.

WILLIAM A. PEARSON, PHILADELPHIA.

Before any authoritative statement can be made in regard to the relative merits of the various pharmaceutical preparations of Ergot, some accepted method of testing them must be agreed upon and all tested by this method.

Possibly it is a little premature to assert that any one of the several methods proposed is a satisfactory one for testing preparations of this complex drug, however, the results of blood pressure tests on dogs have so generally been considered of value that this method has been used as a basis for comparing the activity of the samples tested, and several reasons will be given later for believing this method is a good index of physiologic and even therapeutic activity.

Outline of Blood Pressure Method Used in These Tests. All dogs were well fed for at least ten days before they were used, they were of various breeds, of both sexes, and most of them weighed about ten kilogrammes. Each dog was anesthetized by injecting intraperitoneally a sufficient quantity of 10 percent solution of trichlorobutyl alcohol dissolved in olive oil, to produce a deep narcosis (30 cc. is usually sufficient for a dog weighing ten kilos).

The carotid artery was directly connected with a U shaped mercury manometer, using half saturated magnesium sulphate solution to fill cannula and rubber tubes. The preparations to be tested were injected into the femoral vein. Solid preparations were usually dissolved in sufficient physiological salt solution or dilute alcohol so that 1 cc. of the solution would represent 1 gm. of the crude drug. After filtering, 1 cc. of the filtrate was injected into the femoral vein.

Several reproductions of kymograph records of blood pressure tracings are presented. Unfortunately the reduction has obliterated the individual pulsations, time marks, and points of injection. Each plate represents a continuous tracing for about ten minutes. The blood pressure stated in each description has been obtained by measuring the original tracing, and is not multiplied by two as is sometimes done when using a U shaped mercury manometer.

Plate No. 1 shows the action on the blood pressure of a freshly prepared fluid-extract of Ergot, U. S. P. made from selected drug and under the best conditions of manufacture.

The dog weighed 8.2 kilos and the blood pressure promptly rose 65 millimeters after the injection of 1 cc. of the fluid extract. This greatly increased pressure was sustained throughout the tracing (and much longer).

This sample was found to test satisfactorily by the cock's comb test and by the uterine method.

Five hundred samples of this fluidextract were sent to as many physicians and the clinical reports returned were all favorable and several actually remarkable.



Plate No. 1

One physician reported that it stopped a very bad post partum hemorrhage in twelve minutes after it had been taken orally.

Activity After Heating—Experimental.

One cubic centimeter of a fluidextract of Ergot was heated on the steam bath (about 95° C.), for thirty minutes. At the end of this time the residue was taken up with about two cubic centimeters of dilute alcohol and the total quantity injected. The first half of Plate No. 2 shows the effect on the blood pressure, namely a temporary maximum rise of 13 mm. The last half of the tracing shows the effect of 1 cc. of the original fluidextract before heating. A sustained rise of 15 mm. It should be pointed out that the results of the first injection of Ergot must be considered most reliable. However, when the injection fails

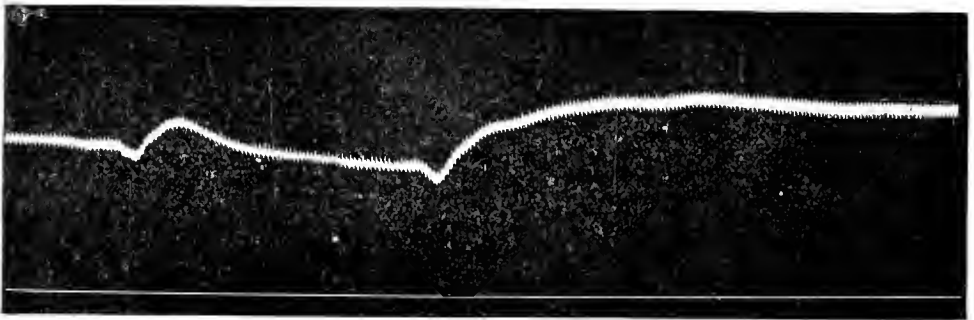


Plate No. 2

to produce much change in blood pressure the results of a second or even a third injection may be regarded of considerable value.

Plate No. 3 shows the effect of heating the fluidextract of ergot on the steam bath for 15 minutes. It may be seen that but little diminution has taken place

of its power to raise and sustain blood pressure compared to the sample heated for 30 minutes (Plate No. 2).

One cubic centimeter of the same fluidextract of ergot as was used for Plate No. 2 and 3 was evaporated to dryness by placing near an electric fan for one

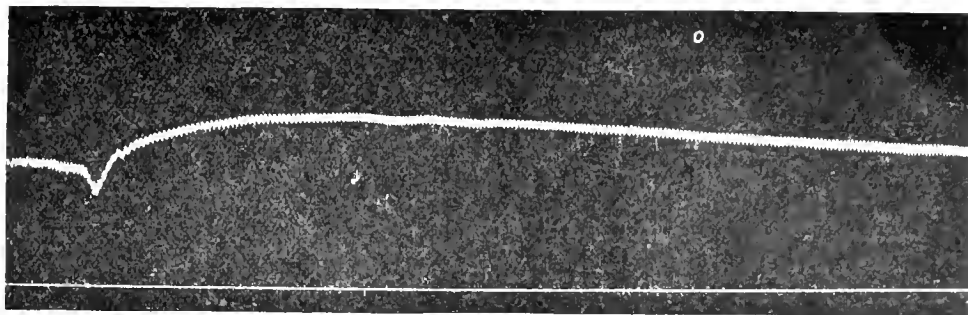


Plate No. 3

hour. The residue was set aside at room temperature in the light for three days, then dissolved in 1 cc. of dilute alcohol and injected into a dog. The blood pressure rose 20 mm. and was consistently sustained throughout the tracing. (See Plate No. 4.)

From an examination of tracings Nos. 1, 2, 3 and 4, it may be readily seen that (1) it is possible to obtain a fluidextract that will greatly increase the blood pressure and consistently sustain it, (2) 30 minutes on the steam bath greatly destroys the blood pressure raising power of a fluidextract of ergot, and (3) that 15 minutes on the steam bath or one hour over a fan does not greatly destroy the power of a fluidextract to raise and sustain blood pressure. Therefore solid preparations of Ergot which will materially raise and sustain the blood pressure are possible. Let us see the action of several of the more important solid preparations on the market. All of these samples were taken from the wholesale department of Smith, Kline & French Co., and represent products from several of the more prominent manufacturers.

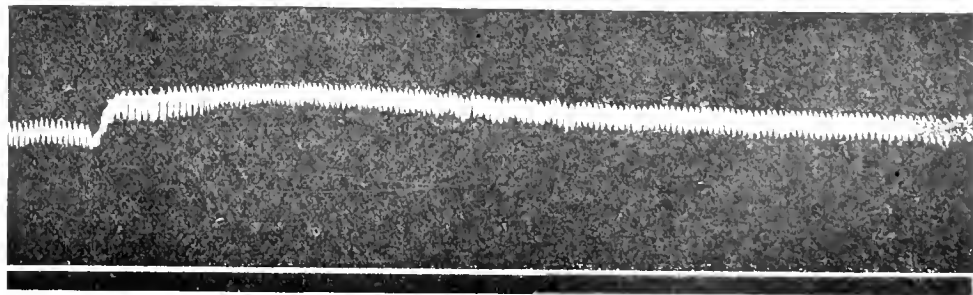


Plate No. 4

Plate No. 5 shows the result of injecting 1 cc. of 1-5 solution of extract of ergot, U. S. P. The only favorable indication produced by this sample is the slight widening of the tracing which is suggestive of some direct stimulation of the heart.

Plate No. 6 shows the result of injecting 1 cc. of a 1 to 5 solution of another sample of extract of ergot, U. S. P. This sample should be considered not only incapable of producing its intended therapeutic action, but actually dangerous to human life as it lowered the blood pressure 20 mm., greatly increased the pulse rate and depressed the contractions of the heart.



Plate No. 5

Plate No. 7 shows the result of injecting 1 cc. of a 1 to 5 solution of powdered extract of ergot. Note the marked preliminary fall and the temporary rise in blood pressure.

Just previous to each of the two depressions on the first half of tracing reproduced in Plate No. 8, powdered extract of ergot and solid extract of ergot were respectively injected in quantities corresponding to 2 gm. of the original crude drug. It is needless to say that neither preparation materially increased the blood pressure. About half way between the second depression and the marked rise, 2 cc. of 70 percent alcohol was injected. No appreciable change in blood pressure took place, showing that the alcoholic menstruum injected is not responsible for the change in pressure when an active fluidextract of ergot is injected.



Plate No. 6

The first marked rise (20 mm.) in blood pressure was caused by the injection of 1 cc. of a good fluidextract of ergot and the second rise (35 mm.) by the injection of $\frac{1}{2}$ cc. of tincture of strophanthus.

The first half of Plate No. 9 shows the effect on the blood pressure of an-

other brand of powdered extract of ergot, the second half, the effect of 1 cc. of a 1 to 5 solution of Ergotin Bonjean.

Plate No. 10 shows the effect of injecting 1 cc. of a 1 to 5 solution of another sample of Ergotin Bonjean.

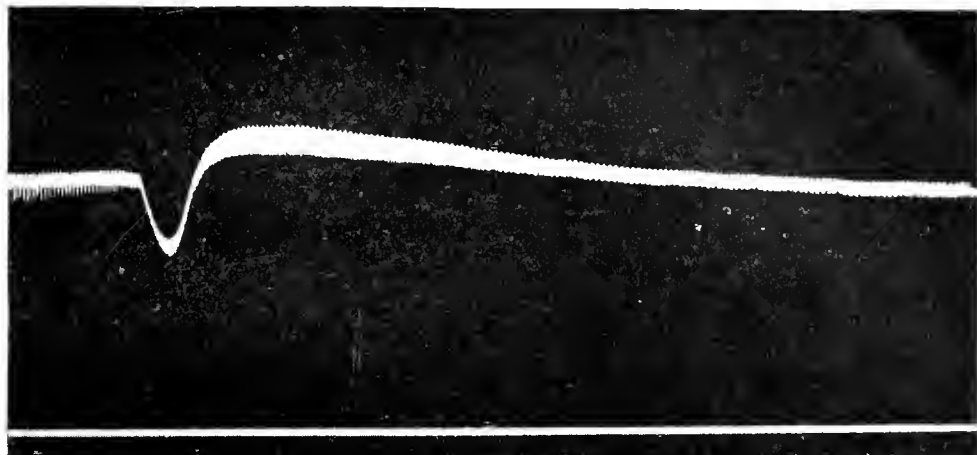


Plate No. 7

Plate No. 11 shows another kymograph record showing the bad effect of injecting 1 cc. of a 1 to 5 solution of Ergotin Bonjean. Although the heart of this dog was strong and vigorous this sample lowered the pressure, greatly increased the rapidity of the heart beat and actually killed the dog within five minutes. A dose of this product might stop a post partum hemorrhage by reducing the blood pressure, but it is very doubtful if any physician would use it if he knew its marked depressant action on the heart.

The first injection in *Plate No. 12* is 1 cc. of a 1 to 5 solution of Ergotin Bonjean. This sample actually raised the blood pressure 10 mm. The second

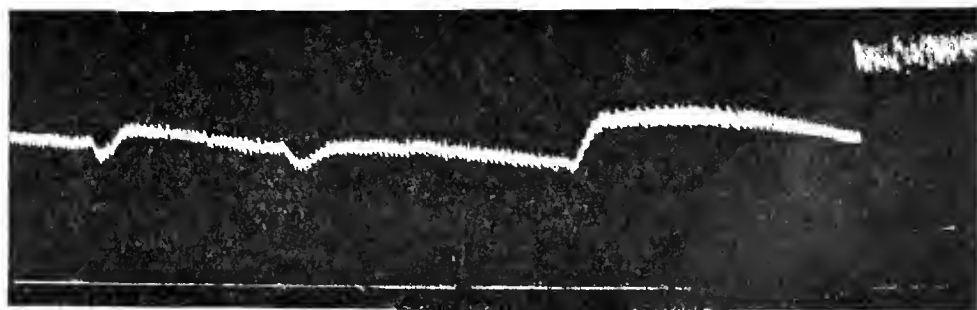


Plate No. 8

injection is 1 cc. of a fluidextract of ergot, which raised the blood pressure 20 mm. Still better samples of Ergotin Bonjean have been examined but most of those on the market will markedly lower the blood pressure as may be seen from the preceding plates.

The first half of Plate No. 13 shows the effect of a 1 cc. of 1 to 5 solution of one brand of Ergotin Bonjean, the second half of tracing shows the effect of injecting 1 cc. of a 1 to 5 solution of another brand of Ergotin Bonjean. The marked difference between the physiological action of the two samples is good

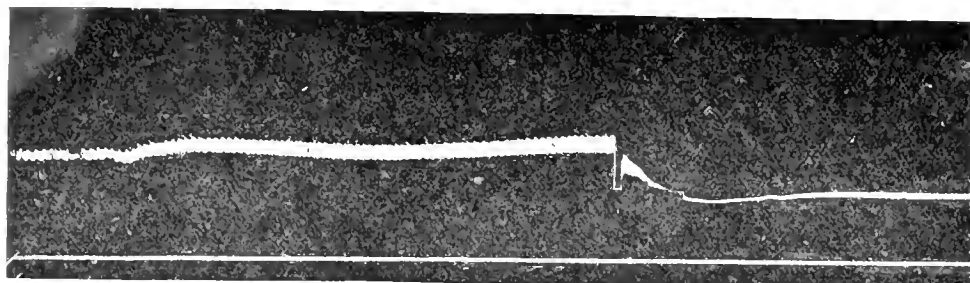


Plate No. 9

evidence that equal therapeutic results would not be expected. And the action of either would probably be different than the fluidextract shown in Plate No. 1.

The first injection in Plate No. 14 is 1 cc. of a 1 to 5 solution of Ergotin Bonjean. The second injection 1 cc. of a 1 to 5 solution of solid extract of Ergot; the third injection $\frac{1}{2}$ cc. of tincture of Strophanthus, which raised the blood pressure 20 mm.

Plate No. 15 shows the action of another sample of Ergotin Bonjean. One cc. of a 1 to 5 solution was injected. Certainly the therapeutic action of this sample would be different from the fluidextract shown in Plate No. 1.

The first two injections of tracing reproduced in Plate No. 16 are respectively 1 cc. and 1.66 cc. of a 1 to 5 solution of the same solid extract of Ergot. It may be seen that the increased dose does not affect the blood pressure proportionally. The third injection is 1 cc. of fluidextract of ergot, which was one year and six

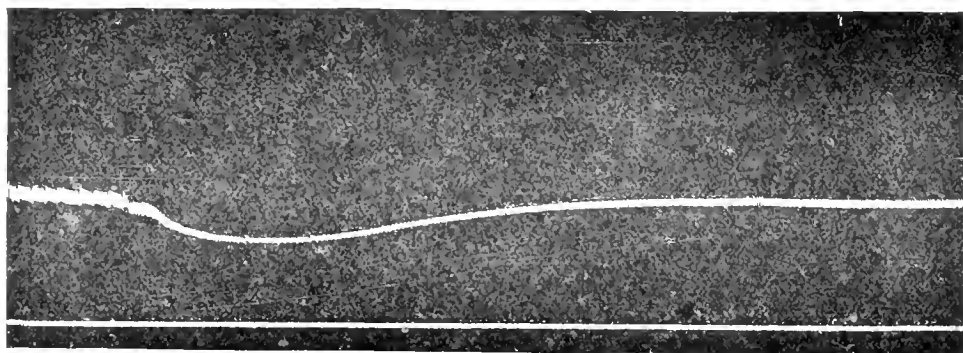


Plate No. 10

months old at time of injection. This fluid extract was a portion of the lot which was used for making Plates No. 2, 3 and 4, and when fresh it produced a rise in blood pressure of about 20 mm. and consistently sustained the blood pressure for at least thirty minutes. In this tracing may be seen one of the earliest signs of

deterioration, namely, a failure to consistently sustain the blood pressure. Therefore a complete blood pressure tracing is preferable to an "abbreviated" one where the drum of the kymograph is permitted to be stationary while making the tracing and recording only the maximum pressure reached.

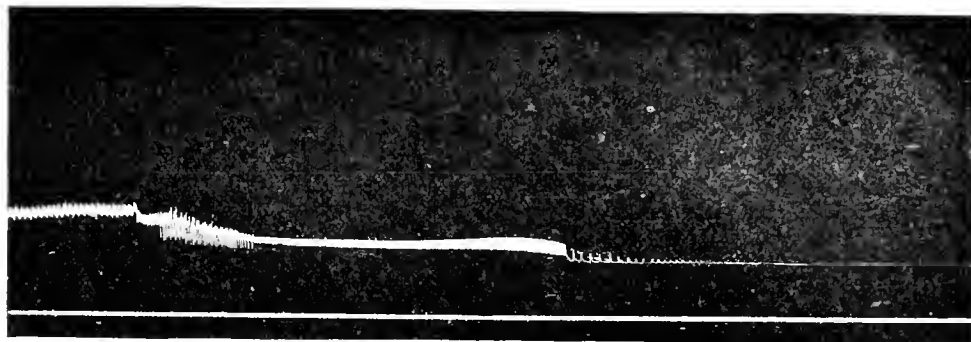


Plate No. 11

For the purpose of comparing one preparation of ergot with another it was formerly my custom to inject into the same dog 1 cc. of a standard preparation of ergot, but since the standard fluidextract of ergot changed so rapidly and the dog was not sensitive to two injections close together it has more recently been my custom to inject $\frac{1}{2}$ cc. of the U. S. P. tincture of *Strophanthus* (see Plates 8, 14 and 17). This procedure has a two-fold advantage; first, it gives an idea of the sensitiveness of the dog to drugs which increase the blood pressure and, second, the action of *Strophanthus* is not interfered with by previous injections of ergot.

Plate No. 17 shows how the increase in blood pressure due to ergot may be compared with the increase in blood pressure produced by *Strophanthus*. In this case 1 cc. of fluidextract was injected which produced a rise in blood pres-

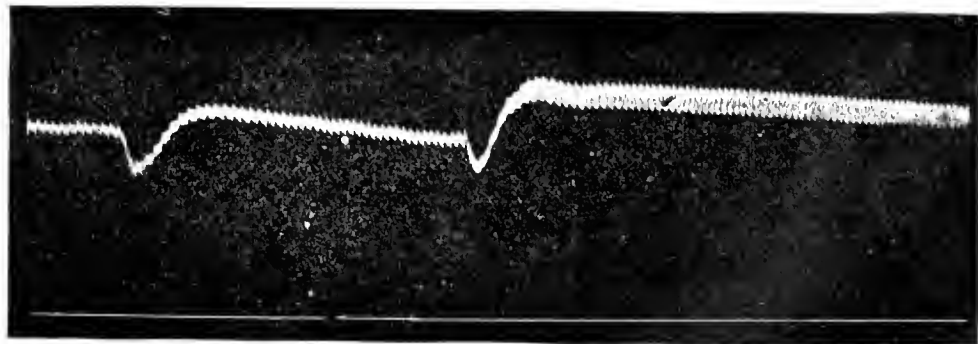


Plate No. 12

sure of 20 mm. and $\frac{1}{2}$ cc. tincture of *Strophanthus* produced a rise of 25 mm. After the increase of blood pressure due to *Strophanthus* had taken place 1 cc. of ether was injected and this caused the blood pressure to return to nearly the same as before any injection had been made. It is seldom possible, however,

to make another tracing from the same dog after the injection of $\frac{1}{2}$ cc. of tincture of Strophanthus. The tincture of Strophanthus used was found to have a minimum fatal dose per gm. weight of frogs of 0.000,16 cc. and the same lot of frogs to be killed by 0.000,001,1 gm. of crystalline strophanthin (Hough-

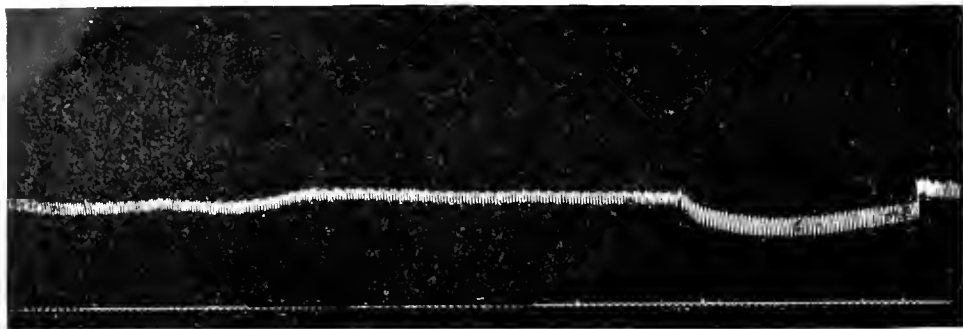


Plate No. 13

ton) per gm. body weight. There is no reason why crystalline strophanthin could not be used as a standard for comparison in blood pressure tests and this procedure would probably be an advantage.

Plate No. 18 shows the difference in pharmacologic action between a sample of fluidextract of ergot that has been tightly corked and the same one when frequently exposed to the air. The first injection consisted of 1 cc. of a fluidextract of ergot that had been kept for one year and six months in a brown pint bottle protected from the light but at room temperature and uncorked about every two weeks and a little poured out, much in the same condition as a retail druggist would keep his stock bottle. The rise in blood pressure was only temporary and amounted to a maximum of 20 mm. The second injection consisted of 1 cc. of the same identical fluidextract which had been kept tightly corked in a 4 oz. bottle

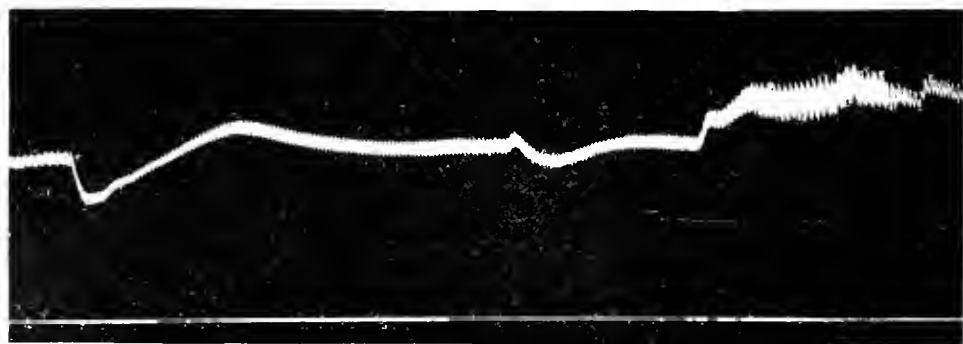


Plate No. 14

for the entire time, at the same temperature and protected in same way from the light. The maximum rise in blood pressure amounted to 25 mm. and this increased pressure was much more consistently sustained.

Discussion. The cause of the initial fall in blood pressure has not been set-

tled. In Plate No. 1 it is absent, in Plate No. 18 it is absent in the second injection, but present in the first. These examples and many others indicate that it is due to some deterioration. It may be due to amines formed in decomposition. Hydroxylamine produces a similar fall but para hydroxyphenyl-ethyl-amine

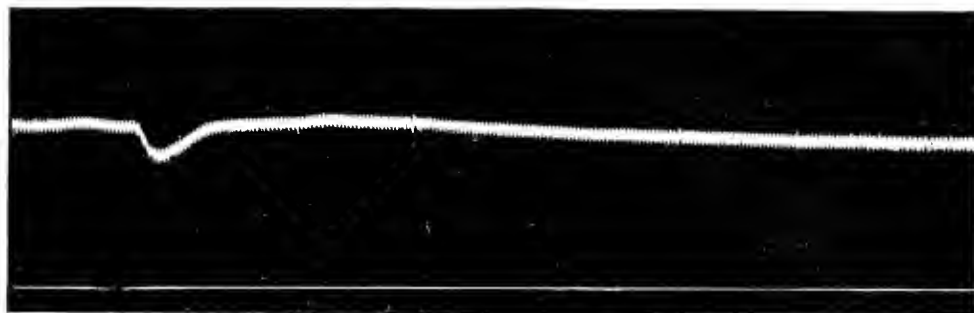


Plate No. 15

which is naturally present in ergot increases the blood pressure. Beta-imidazolylethylamine which is also present, sometimes increases the blood pressure, sometimes lowers it. If the acetic acid in the U. S. P. fluidextract be exactly neutralized with sodium bicarbonate the temporary fall in blood pressure is diminished or eliminated.

No doubt there is a close relation between the cock's comb test and blood pressure test as there undoubtedly is between the blood pressure test and uterine test.

If a leghorn rooster be anesthetized with 5 cc. of 10 percent trichlorbutyl alcohol in olive oil, its carotid artery connected with a mercury manometer, and $\frac{1}{2}$ cc. of fluidextract of ergot be injected either intravenously or intra muscularly the blood pressure rises, the comb becomes dark at the tips, and if a section be immediately made through the comb with a sharp knife the tips will be found

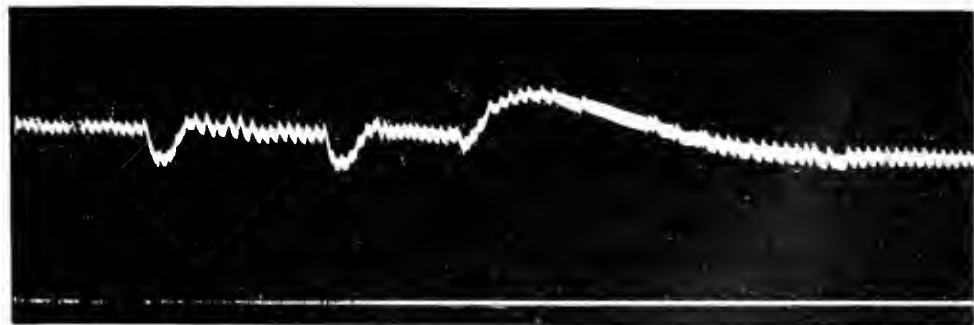


Plate No. 16

gorged with blood and scarcely any blood at the base of the comb. This experiment indicates a constrictor action of the arterioles which is directly the cause of the darkening of the cock's comb.

Ergot may be said to contract muscle tissue generally with a particular action

on the pregnant uterus. The greater portion of muscular tissue of the arteries and more particularly in the smaller arteries contract and this action is directly responsible for the rise in blood pressure. Even in the capillaries the single layer of endothelial cells may be contracted. The arteries in the gravid uterus are



Plate No. 17

abnormally thickened and this fact may directly account for the selective action mentioned by authorities on *materia medica*.

It seems clear that the blood pressure method of testing ergot at least makes possible the rejection of inferior samples and preparations of ergot and that a preparation which will conform to the following standard could safely be recommended for therapeutic use.

Blood Pressure Standard for Ergot. One cc. of a fluidextract of ergot (or an amount corresponding to 1 gm. of crude drug of any preparation) when injected into the venous circulation of a dog weighing approximately 10 kilos, and which has been completely anesthetized with trichlorbutyl alcohol should promptly increase the blood pressure 30 mm. (60 mm. if reading is doubled) and

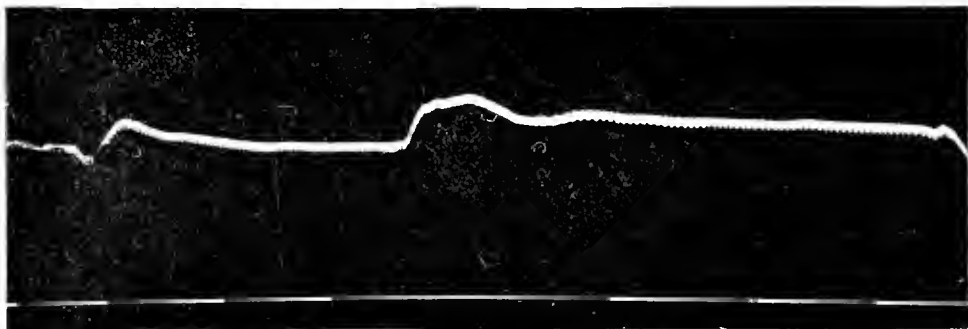


Plate No. 18

consistently sustain it for at least 10 minutes. Furthermore a preliminary fall in blood pressure should not be over 10 mm. (20 mm. if reading is doubled) and the width of the tracing should be increased at least one-fourth.

Summary. In the brief descriptions of the plates several ideas have been more or less clearly brought out. Other ideas may be suggested by a study of

the reproductions of the kymograph records. The more important points are as follows:

First—A therapeutically active preparation of ergot has a considerable vaso constrictor action, which increases the blood pressure of a dog. (Plate No. 1.)

Second—A therapeutically active proportion of ergot directly stimulates the heart muscle. The kymograph records show the slowing of the heart and an increase in the difference between the blood pressure during systole and during diastole. Of course the amount of increase in the blood pressure caused by the direct stimulation of the heart muscle is recorded along with the vaso constrictor action, yet a good idea of the direct action on the heart muscle can be obtained by observing the increase in the difference between the blood pressure during systole and during diastole, also by noting the decrease in the rate of the heart beat.

Third—It has been shown that a therapeutically active preparation of ergot increases the blood pressure of a rooster and that the vaso constrictor action of the arterioles in the comb may be directly responsible for the darkening.

Fourth—It is very doubtful if an active preparation of ergot contracts only the muscles of the uterus without affecting either the heart muscle or the muscular tissue of the blood vessels, both of which may be recorded in the blood pressure tracings.

Fifth—One of the first evidences of the deterioration of a preparation of ergot is the loss of power to sustain the blood pressure over a period of several minutes. A good preparation of ergot will sustain the blood pressure for about two hours.

Sixth—When the heat of a steam bath is applied to a sample of fluidextract of ergot it loses its power to materially increase and sustain the blood pressure. Evaporation of the fluidextract over a fan does not destroy its power to materially increase and sustain the blood pressure.

Seventh—Tincture of *Strophanthus* may be injected after the injection of Ergot for the purpose of determining the susceptibility of the test animal.

Eighth—Most of the solid preparations of ergot tested show a markedly different physiological action from a therapeutically active fluidextract of ergot. Some of the solid and powdered extracts of ergot tested showed practically no effect on the blood pressure, others markedly lowered the blood pressure. Various samples of Ergotin Bonjean were found to produce widely different changes on the blood pressure.

Ninth—The therapeutic activity of solid and powdered extract of Ergot and of Ergotin Bonjean should be regarded with suspicion and a recently tested fluid-extract of ergot used.

Tenth—An important link of evidence to prove or disprove the therapeutic efficiency of Ergot preparations would be five hundred clinical reports upon a product which produced a marked fall in blood pressure such as was used for the kymograph record reproduced in Plate No. 11.

In this case the dog actually was killed by the preparation yet some might claim it was therapeutically efficient because a greatly lowered blood pressure

would stop a hemorrhage. The rank and file of physicians would, however, prefer to stop a hemorrhage by other means.

If any one cares to take the responsibility of making clinical tests with such a product let him who doubts the significance of blood pressure tests take the initiative.

PHARMACOLOGIC LABORATORY, SMITH, KLINE & FRENCH COMPANY.

DETERMINATION OF ALCOHOL IN TINCTURE OF IODINE.

J. W. MARDEN.

It is essential in the assay of tincture of iodine, to determine the percentage of alcohol used in preparing the tincture, as well as to determine the iodine and potassium iodide. The ordinary method of determining alcohol by making alkaline with potassium hydroxide and distilling cannot be used on this preparation because the ethyl iodide always existing in the tincture distills at even a lower temperature than alcohol and in experiments run for this purpose considerable amounts of the iodide were found in the alcoholic distillate. There have been various modifications of the distillation method suggested (1, 2, 3), but none of them combine the desired accuracy with the small amount of time necessary for a determination. The method proposed by Thurston and Thurston consists in the decolorizing of the iodine with sodium thiosulphate, making alkaline with sodium hydroxide, distilling and determining the alcohol in the ordinary way. The results by this method are "practically the percentage of absolute alcohol in the mixture." Experience has shown that with this method only approximate results can be attained, and often even after redistillation the alcoholic solution smells strongly of hydrogen sulphide and sulphur dioxide. It might be suggested, however, that arsenous oxide would be better than sodium thiosulphate for decolorizing the iodine.

A shorter method in which the percentage strength of the alcohol used in preparing the tincture can be calculated from the specific gravity of the tincture, based upon experimentally determined factors, is proposed in this paper. It was found in the laboratory that a correction factor could be obtained for varying amounts of either potassium iodide or iodine when dissolved in alcohol, so that the weight of a given volume of alcohol could be calculated by subtracting the increase in weight due to either. This factor for any given volume consists in the weight change due to one gram of the added substance dissolved in 100 cc. of alcohol. It is very obvious that each substance must have its own factor. If the factor be multiplied by the number of grams of iodide per 100 cc. as the case may be, the weight of alcohol used in the preparation is found by subtracting both from the weight of the given volume of the tincture.

(1) Inversion of I with Hg as suggested by Alcock.—*Proc. A. Ph. A.*, 1904, 583.

(2) Inversion of I with Fe as suggested by Roscoe & Schorlemer.—*Treatise on Chemistry*, Vol 1.

(3) Inversion of I with $\text{Na}_2\text{S}_2\text{O}_3$ suggested by Thurston & Thurston.—*Proc. A. Ph. A.*, 1912, 1155.

For the following experiments, a specific gravity apparatus made from a 5 cc. pipette as described by Mulliken⁴ was used. This pipette at 20° C. holds 4.7050 grams of distilled water. For this apparatus the factor for the increase of weight due to one gram of potassium iodide dissolved in 100 cc. of alcohol is equal to .0365. The increase of weight due to one gram of iodine dissolved in 100 cc. of alcohol is .0333.

Mixtures of water and alcohol were prepared and the percentage of alcohol determined by the specific gravity. Tinctures were then made up with these, using known weights of iodine and potassium iodide, the specific gravity of each tincture determined, and from this the specific gravity of the alcohol used in the preparation calculated as is shown in the example given below.

Sample calculation:

Specific gravity of the alcohol used for tincture preparation	0.8130 equals 95.82 percent by volume at 20° C. (Determined before tincture was made.)
Weight tincture (in pipette)	4.1246 at 20° C.
Weight water	4.7050 at 20° C.
Grams KI per 100 cc. equals	3.550 which multiplied by .0365 equals .1295, equals the weight change due to KI per 100 cc.
Grams I per 100 cc. equals	5.060 which multiplied by .0333 equals .1685, equals the weight change due to I per 100 cc.
4.1246	
.1295	3.8266 equals specific gravity alcohol, equals 0.8133, equals 95.74 percent by volume.
3.9951	4.7050
.1685	
3.8266	

The results given in the following table have all been calculated in the same way.

TABLE.

No.	Wt. Tincture	gm. KI per 100 cc.	gm. I per 100 cc.	Pct. of Alc. by calc.	Pct. of Alc. used in prep.	Dif.
1.....	4.1246	3.550	5.060	95.74	95.82	—0.08%
2.....	4.1532	2.504	7.100	95.71	95.82	—0.11%
3.....	4.1052	1.250	6.920	95.61	95.82	—0.21%
4.....	4.0467	0.000	6.748	95.97	95.82	+0.15%
5.....	4.1967	4.000	5.918	94.26	94.03	+0.23%
6.....	4.2762	4.454	6.770	92.24	92.24	0.00%
7.....	4.4799	4.690	7.030	79.12	78.93	+0.19%
8.....	4.3937	4.430	6.376	83.46	83.64	—0.18%
9.....	4.5927	4.770	6.886	69.79	70.08	—0.29%
10.....	4.5062	3.475	5.155	68.25	68.56	—0.31%
11.....	4.6827	4.842	6.748	61.40	61.23	+0.17%
12.....	4.5851	2.521	3.940	53.67	53.48	—0.19%

It will be seen from the above data that these results check to 0.3 percent with this sort of an apparatus. This is but little more than the limits of error of the apparatus, for although an error of reading the pipette of 0.5 mm. would make an error of but 0.05 percent (diameter of the tube 2.5 mm.) it is very hard with a pipette to always get the last drop wiped off exactly the same, and a difference of but 4.0° C. in temperature would make 0.1 percent error on the weight of water.

(4) Identification of Pure Organic Compounds, Vol. I, page 229.

According to Briggs⁵ it is possible to determine alcohol (by distillation) to 0.2—0.3 percent with great care, but "still in the regular assay of a great many samples much larger errors will creep in and results may be off as much as 1.0 percent to 1.5 percent alcohol." If this be true the above results done without great precautions check very favorably with the finest results attainable by the other methods.

The factors can be restated so as to be of use in any specific gravity weight apparatus as follows: The increase in weight in any apparatus due to 1 gm. of KI in 100 cc. of alcohol is .00775 multiplied by the weight of water necessary to fill the same at 20° C. Likewise, the increase in weight in any apparatus due to 1 gm. of I in 100 cc. of alcohol is .00707 multiplied by the weight of water necessary to fill same at 20° C.

If the percent of alcohol actually existing in the tincture is desired instead of the percentage strength of the alcohol used in making the preparation, the result obtained above should be divided by 1.022.

CONTRIBUTED FROM THE SOUTH DAKOTA STATE FOOD AND DRUG LABORATORY,
September 12, 1913, Vermilion, South Dakota.

LONG FELT WANTS.

The man who sets out to make his fortune filling long-felt wants usually ends in the attic bedroom at the county poor farm. There aren't any long-felt wants. There are scarcely any felt wants of any kind. Usually before a want pips the shell there are nine advance agents waiting for it with sample pulmotors, health foods, soothing sirups, fancy soaps, and a pair of ready-made wings.

Can you imagine a dress-goods manufacturer waiting until the women of America rise up and cry for Alice-blue cloth, or a yellow pattern with pink rosebuds in it? Do you fancy a chewing-gum manufacturer waits until the public has longed and sighed a few years for a certain flavor?

Today success means supplying the wants of tomorrow. It is not the long-felt wants it pays to look after, but the unborn ones. It is the man who has imagination and common human instincts who can look ahead and see what the world will want to-morrow and the next day that wins.

And, after all, when you notice it, that is the secret of success in politics, in business, in everything—to have the understanding of men which comes of sympathy, or of fellow feeling, which makes one feel their real needs; and with it that constructive imagination that will anticipate the wants that are to come.—*Popular Magazine*.

⁵ Jr. Ind. and Eng. Chem., Jan., 1913.

Papers Presented to Local Branches

THE A. PH. A. BUILDING.*

JOSEPH W. ENGLAND.

Probably the most important subject that came before the Nashville meeting of the American Pharmaceutical Association was the subject of permanent headquarters for the Association, referred to in the address of President William B. Day, as follows:

"The steady growth of our Association and the constantly increasing scope of its efforts for pharmacy have combined to emphasize the need of a center around which these activities may be grouped and from which they may be guided to greater success. Such a nucleus would be afforded by the proposed A. Ph. A. Home.

"Let it be clearly understood at the outset that this much desired home is not a charitable institution! We are not competing with other associations who may wish to establish homes for aged, infirm or indigent druggists. The home that we are striving for is to be the headquarters of a virile organization just awakening to a realization of its power and its manifold possibilities and determined to prove its strength in developing the true pharmaceutical spirit among the druggists of our land!

"The building which we hope to erect soon, need not be large nor the site costly. Rather it must be well-located where facilities necessary to the work may be provided to advantage. There should be ground sufficient to permit of future additions. The location should be in a large city, convenient to the majority of the members and where facilities will be afforded for printing and binding the publications of the Association. The quarters must be large enough to provide offices for the Journal, suitable space for a library, a laboratory and a museum, as well as storage rooms for the stock of publications and for other property of the Association. Necessarily the building should be of fireproof construction.

"The financial problem, then, is to raise a fund sufficient to purchase a site, erect a building and provide for its maintenance. It has been suggested that \$50,000 would be needed for the first two purposes and the possibility that the income from the permanent funds of the Association will take care of the item of maintenance—at least for a time.

"The sentiment of the Association is apparently strongly in favor of the projected home and the raising of a sufficient fund should not be exceptionally difficult.

"An appeal to our members and to pharmacists generally would no doubt

* Read before the Philadelphia Branch, Oct. 9, 1913.

meet with a generous response. The subject should be thoroughly discussed in our sessions and an expression from the House of Delegates should be secured."

This subject, with others, was referred to the Committee on President's Address, which reported as follows:

"We recommend that the Council be instructed to continue consideration of the project of a building to serve as a headquarters for the Association. In this connection the committee suggests that the prospective structure be called the "A. Ph. A. Building," hereafter, because of the ambiguity of the word "home," which has been used."

The recommendation was approved by the Association in general session assembled, and referred to the Council.

Scarcely had this recommendation been adopted when William R. White, of Nashville, presented to the Council the following proposition:

"On behalf of the Nashville Industrial Bureau, I am authorized to offer to the American Pharmaceutical Association the right and title of either of the following tracts of land:

"First, a lot situated on Wedgewood Avenue about one quarter mile from The Tennessee State Fair Grounds within one hundred feet of the tracks of the Louisville and Nashville Railroad, and on the street car line leading to said Fair Grounds, about two miles south of the Public Square; said tract to consist of one half acre or more, being a part of the four and one half acre tract now owned by the Nashville Industrial Bureau, or

"Second, a lot situated on North Third Avenue within one hundred and fifty feet of the Louisville and Nashville Railroad, and in close proximity to the tracks of the Nashville and Chattanooga and the Tennessee Central Railroads, one mile north of the public Square, containing about one half acre.

"Provided, the said American Pharmaceutical Association agrees to build an appropriate building on either of these lots that it may select, to be used as the Headquarters of the Association, Secretary and Editor, and in which it will operate laboratories for experimental purposes and keep its stock of supplies, etc."

The offer of the Industrial Bureau of Nashville was received by the Council and placed on record for future consideration.

The Council is now in a receptive attitude and speaking for this body I can say that it will be most pleased to receive and give careful consideration to any and all propositions that may be made to it looking towards the establishment of an A. Ph. A. building or headquarters.

To secure such an establishment one of several methods could be employed, as follows: (1) the Association could invite subscriptions and when sufficient funds were obtained purchase a site and erect the building; (2) the Association could purchase a site and invite subscriptions with which to erect the building, later; or (3) the Association could invite offers of sites (similar to the Nashville offer) or offers of site and building.

Probably the most difficult task, in the absence of specific offers, will be to select a site that will be acceptable to the majority of the members, but this should not be impossible, and doubtless will not be, in view of the splendid

loyalty of the members of the Association. All will doubtless agree with Prof. Day that the building should be located in a large city, reasonably convenient to the majority of the members, with good libraries and museums, and where facilities exist for printing and binding the publications of the Association; but which shall be the fortunate city—Philadelphia, Washington, D. C., Pittsburgh, Cincinnati, Columbus, Nashville, Indianapolis, Chicago, Minneapolis or St. Louis?

There is no doubt as to the imperative need of the Association for permanent headquarters: Its headquarters now are wherever the General Secretary happens to reside. Under the able direction of General Secretary Beal, the work of the Association is growing rapidly, but the Association will never grow as it should until it has a plant of its own wherein it can carry on its work more efficiently than is possible under present conditions.

With the creation of the Commission on Proprietary Medicines by the Association at the Nashville (1913) Meeting the necessity of a research laboratory for the Association will become most apparent. While the work of the commission for the first year or two will be simply to gather facts, the time will come when the statements of facts obtained will have to be supplemented by laboratory experimentation.

Furthermore, the Year Book, containing the Report on the Progress of Pharmacy, could be greatly enhanced in value if supplemented by original research work in the laboratories of the Association, and such laboratories could be utilized, also, for the preparation or investigation of data for the Committee on U. S. Pharmacopoeia, the committee on National Formulary, and the Committee on Unofficial Standards of the Association.

In addition, the marked success of the Journal of the Association emphasizes the great need of headquarters in which the printing work of the Association can be more systematically and economically handled.

The Association will never exert that degree of influence it can and should have in the furtherance of the object for which it stands until it has permanent headquarters; and it is urged upon every one interested in American Pharmacy to give this subject his earnest, constructive thought to the end that the way may be found to provide the needed facilities and advance the interests of our profession, a profession which, in the importance of its service to humanity, stands second to none, not even to the sister profession of medicine.

THE A. PH. A. COMMISSION ON PROPRIETARY MEDICINES.*

CHARLES E. VANDERKLEED.

On August 19, 1913, at the second general session of the American Pharmaceutical Association at Nashville, the report of the minutes of the Council announced that this body had decided to appoint a commission on proprietary medicines, the commission to consist of five members appointed for terms of from one to five years, and subsequently for five years each. As I am not a

* Read before the Philadelphia Branch, Oct. 17, 1913.

member of the Council, I am unable to throw any light upon the discussion and arguments which led up to the adoption of this action.

The duties of the proposed commission were outlined as follows:

1. to inquire into and to report to the Council upon the general subject of proprietary medicines in its relation to pharmacy, medicine and the public health.

2. to inquire whether any of the preparations popularly known as "patent medicines" contain alcohol or narcotic drugs to such an extent as to create a habit in the user or satisfy a habit otherwise created.

3. to inquire to what extent, if any, the commonly advertised proprietary medicines contain potent drugs in sufficient quantity to make the preparations dangerous in the hands of the laity.

4. to inquire to what extent the popularly known proprietaries are fraudulently advertised or differ in origin or composition from the claims made for them and as to the extent to which any are advertised for the cure of diseases generally recognized by the medical profession as incurable.

The action of the Council was approved by the Association with the understanding that the commission must submit its reports for the approval of the Council or the Association before any of its actions would be deemed to be representative.

At a subsequent session of the Association on August 23d, the Council announced the personnel of the new commission on proprietary medicines as follows:

J. H. Beal, Scio, Ohio, Chairman.

T. F. Main, New York.

M. I. Wilbert, Washington.

J. C. Wallace, New Castle, Pa.

Chas. Caspari, Jr., Baltimore.

This is the whole story so far as what has actually occurred is concerned. It is hardly fair to the commission to comment on the work which they are instructed to do, before they have had an opportunity to study the situation and to make their first report. It is obvious, however, that they have been assigned a task of enormous proportions. To inquire into and report to the Council upon the general subject of proprietary medicines in its relation to pharmacy, medicine and the public health is a task which could be approached from many angles. The personnel of this committee headed by our capable and fair-minded General Secretary, Dr. Beal, is such as to insure a comprehensive and unprejudiced report. When it comes to the question of determining whether a preparation, whether popularly known as "patent medicine" or not, contains sufficient alcohol or narcotic drugs to create a habit or satisfy a habit otherwise created, the difficulties ahead of the commission loom up very large indeed. I am of the opinion that such questions as this would better be left to the medical profession to settle, although the task would probably prove just as stupendous to them.

In the same category would I place the instruction to determine what commonly advertised proprietary medicines contain potent drugs in sufficient quan-

tity to make the preparation dangerous in the hands of the laity. This is a question which is eminently one for the medical profession to determine, but I doubt whether any commission of medical men could be found to agree upon a report.

When we come to the fourth instruction, we find more specific directions for carrying out a line of work similar to that already being done by the Council on Pharmacy and Chemistry of the American Medical Association. To the extent that the work of this commission can be made to supplement and aid the work of the Council, it will undoubtedly be helpful. It is sincerely to be hoped that the new commission and the Council will be able to make arrangements whereby their work will be harmonious and so that they may help each other, avoiding unnecessary duplications.

In conclusion, I would call your attention to the fact that Dr. F. E. Stewart last year proposed before this branch just such cooperation between the A. M. A. and the A. Ph. A. as is in part at least contemplated here.

THE MINNEAPOLIS MEETING OF THE AMERICAN MEDICAL ASSOCIATION.*

F. E. STEWART, M. D.

The time limit necessarily imposed by the length of our program makes it impossible for me to report even in general terms, the proceedings of the American Medical Association, of interest to pharmacists, which transpired during the recent annual meeting at Minneapolis. It is assumed that most of the work done by the Association of interest to pharmacists occurs in the Section of Pharmacology and Therapeutics. However, reference to the proceedings of other sections shows that much was done at the last meeting worthy of consideration by pharmacists, in addition to the work of the section on Pharmacology.

Our friend Wilbert generally succeeds in saying something worth listening to. What he said about the carelessness of the retail druggists had a very bitter flavor. We are so accustomed to taking our medicine in pleasant forms that the old-fashioned medicinal preparations which our fathers regarded of therapeutic value just in proportion to their disagreeable nature are not longer in vogue. Therefore, when friend Wilbert undertook to administer bitter medicine which he believed would prove of therapeutic value in the cure of many complaints with which modern pharmacy is afflicted, Professor Remington, in particular, objected seriously to the dose, and manifested his disapproval by a most vigorous protest.

I have not time to comment upon Mr. Wilbert's paper, but I would advise pharmacists generally to read it. Those pharmacists who are in the habit of being exceedingly accurate in their methods will be horrified on reading Mr. Wilbert's statements, and will wonder if he is correct or careless in what he

* Read before the Philadelphia Branch, Oct. 17, 1913.

said. Those who are guilty of carelessness will read the paper with conflicting emotions. His words will fall like the seed of the sower—some will fall upon good ground and bring forth an abundant harvest; other seed will fall by the wayside and the fowls of the air will gather it up; other seed will fall on stony places, and among weeds, and the weeds will spring up and choke the seed, so there will be no harvest.

Personally, I can only say that my experience in the retail drug business, comprising seven or eight years' time spent behind the counters of some of the leading drug-stores in Philadelphia and New York, would lead me to believe that pharmacists, as a rule, are exceedingly careful men. Among the forty thousand retailers in the United States, there are doubtless plenty of ignorant, careless pharmacists, but I hope that I am right in believing that they are rare exceptions to the rule.

Considerable interest was displayed in the subject of oral sepsis, and the care of the mouth and teeth. Dr. Joseph Head, of this city, contributed an interesting paper on the treatment of pyorrhoea alveolaris, or Rigg's disease, to the Section on Stomatology. His success with bacterial vaccines, aided by local treatment, employing for the latter purpose bi-fluoride of ammonium, containing 10 percent hydro-fluoric acid, was reported in detail. Dr. C. P. Brown, of this city, who did Dr. Head's bacteriological work, reported his findings.

It appears that some seven different kinds of micro-organisms may be usually found in the mouth, where they live as saprophytes, feeding on waste matter from the food, and doing no harm. They are mess-mates, and as they live at the same table, are called commensals. If for any reason, the resisting power of the tissues of the mouth are reduced below par, or a strain of one of these micro-organisms of a highly virulent nature finds access to the mouth, one or more of these organisms become parasites, and live at the expense of the tissues.

By the term "tissues" I include the teeth and alveolar processes as well as the mucous membranes of the mouth. The tissues now commence to break down, and pus-pockets appear around the teeth, which gives to the disease the name pyorrhoea, or pus-running disease. Examination of these pus-pockets shows them to be loaded with bacteria.

Dr. Head utilizes the hypodermic syringe to draw the pus from the abscesses at the root of the teeth, thus assuring himself that the pus obtained is free from contamination by extraneous germs, and from this pus Dr. Brown prepared the autogenous vaccines used by Dr. Head. The injection of these vaccines into the patient's body stimulated the mechanism of immunity, thus aiding Nature in her attempts to repel the invading bacteria, so that when the pus-pockets were destroyed by the fluoride, the gums were enabled to heal up and the teeth again became firm in the mouth. The cure of Rigg's disease has at last been discovered, provided the immunity thus obtained against the pathogenic organisms remains sufficiently permanent to warrant such a statement. Time only can determine the final results.

I can close my few remarks in no better manner than by calling your attention to the work of the Council on Pharmacy and Chemistry, in relation to dental preparations, the results of which have been published within the last two months. Dentistry has secured recognition as a branch of medicine, by associa-

ting itself with medicine as dentistry is considered a branch of surgery. Dental therapeutics is taking its place as part of the work of the dental surgeon. Original research on the part of the dental surgeon is having its influence on dental pharmacy. The work of the Section on Stomatology should therefore be watched by pharmacists who aim to keep themselves abreast of the times in regard to dental preparations.

The Council on Pharmacy and Chemistry, by exposing "fakisms" in dental therapeutics, is greatly aiding the work of dental pharmacy. Pharmacists should keep in touch with the work of the Council, and refrain from recommending fake dental preparations to the public.

"CURES," FOREIGN AND NATIVE.

When you are cured in English you are well; when you are cured in German or Italian, you may still be ill; you may even die. An Italian physician, we are told in *The Journal of the American Medical Association* (Chicago, April 26), was recently made to say, when his article was translated into English, "I cured ten typhoid patients last month and six of them died." What he really said was that he had treated ten patients. The word "cure" in German or Italian means simply "treatment"; this is the original sense, from which we have wandered somewhat in our English use. This fact often causes confusion and misapprehension. Says the paper named above:

"Many newspapers are hasty or careless in announcing the discovery in Germany of some method of treatment more or less new, and not infrequently misinformation is given the public through failure to keep in mind the actual meaning of one little word. The German word *Kur* does not mean 'cure,' although it is not an uncommon thing to find it so translated into English. 'To cure' in English means 'to restore to health; to effect a cure'; but in other languages it means merely to apply 'a method of remedial treatment of disease; medical or hygienic care; method of medical treatment.' The German word for 'restoration to health' is *Heilung*, not *Kur*. The Latin word *cura* means merely 'care,' a shade of meaning which is preserved in the derived term 'curator.'"—*Literary Digest*.

The Pharmacist and the Law

ABSTRACTS OF LEGAL DECISIONS.

TAXING SMOKING OPIUM.—The United States Supreme Court holds that the reconversion of the residuum of opium remaining after smoking into a form fit for resmoking is not a manufacture of opium for smoking purposes within the meaning of section 36 of the McKinley tariff act, levying an internal revenue tax of \$10 per pound upon all opium manufactured in the United States for smoking purposes, and prohibiting any person from engaging in such manufacture who is not a citizen of the United States, and who has not given the bond required by the Commissioner of Internal Revenue. The processes of reclamation of the opium charged are two, one by dissolving it in water, straining and purifying the solution so as to remove foreign matter, and then heating and cooking the refined solution, and thereby producing an inferior grade of smoking opium; in the other an admixture of smoking opium of a high grade is employed together with the residuum or yon shee. The court said that if Congress were undertaking to stamp out the practice of opium smoking, it might prohibit such processes of reclaiming, but in prescribing a revenue tax upon the manufacture of opium for smoking purposes it was not intended to subject the same substance more than once to the tax, or to require surveillance over opium smoking resorts,—in which, it would seem, such treatment of the residuum might most readily be conducted,—the same as over a factory or other establishment where the primary conversion of crude opium into smoking opium is conducted. *U. S. v. Shelley*, 33 *Supreme Court*, 635.

SALE OF BUSINESS—AGREEMENT NOT TO ENGAGE IN BUSINESS—AGREEMENT ASSIGNABLE.—A bill was filed in equity by W. L. Jones and J. L. Johnson against H. A. Knowles and the Crystal Pharmacy Company, a corporation, to keep the defendants from engaging in the drug business in the town of Samson, Alabama, for the reason that the complainants had purchased the good will of Knowles, who had contracted with them not to engage in the drug business in

that town for three years. The bill alleged that Jones and Johnson were succeeded by a corporation in which they were the sole stockholders. It was held that the good will passed to this corporation, and it alone could sue to restrain Knowles from re-entering the drug business in violation of his agreement. The seller of the good will of an established business may enter into such an agreement, and as long as the purchaser continues in the business, and the stipulation remains in force, the seller cannot lawfully enter into competition with him either on his own account or as the agent and business manager of another. Nor can he take stock in and help to arrange or manage a corporation formed to compete with the purchaser. Such an agreement is not personal, unless specially made so, but inures to the benefit of one to whom it is assigned with the business. The fact that Knowles, the original seller, owned for a time some stock in the Jones and Johnson corporation, which he subsequently sold, did not release him from his agreement. The corporation alone being entitled to sue the injunction granted to Jones and Johnson individually was dissolved. *Knowles v. Jones*, *Alabama Supreme Court*, 62 *So.*, 514.

CONDITIONAL SALE OF CARBONATOR.—A contract was made for the conditional sale of a soda fountain carbonator at the price of \$130, to be paid \$10 on deposit, \$20 on tender of goods or bill of lading, and the balance of \$100 in ten monthly notes. The contract contained an option under which the buyer might purchase outright for cash. Upon shipping the carbonator, the vendor sent a bill of lading to a local bank, with a letter of instructions, informing the bank of this option, and authorizing the bank to accept a cash payment of \$100, and deliver the bill of lading to the buyer. A similar letter was written to the buyer, who thereupon went to the bank, paid the \$100, received the bill of lading, and installed the carbonator in his drug store. Later the seller, claiming that it had made a mistake of \$10 in its instructions to its agent, brought an action against the buyer in the nature of a replevin to recover the possession of the carbonator. The answer of the defendant was that the bank as the duly authorized agent of the plaintiff, and acting within the scope of its authority, and by the direction of the plaintiff, had made a supplemental agreement with the defendant

by which the title to the carbonator should pass to him upon the payment of \$410 in cash, which agreement was fully executed and passed the title to the defendant. Upon motion, the trial court struck out this answer as sham and frivolous, and judgment was entered for the plaintiff as in default of an answer. On appeal this was held to be error, and the judgment reversed, on the ground that the defense, instead of being frivolous, was the legal resultant of the admitted facts of the case. *A. H. & F. H. Lippincott v. Schneider*, *New Jersey Court of Errors and Appeals*, 87 *Atl.*, 437.

CONDITIONAL SALE OF SODA FOUNTAIN.—The trustee in bankruptcy of the purchaser of a soda fountain on a contract of conditional sale brought an action against the seller to recover the installments paid by the bankrupt on account of the seller's violation of the New York Conditional Sales Law. That law, Section 65 of the Personal Property Law, provides that, where property is retaken by the seller under a contract of conditional sale, it shall be retained for 30 days, during which it may be redeemed, and after that period may be sold at public auction. Unless so sold the buyer, or his successor, may recover the amount paid under the contract. After the bankruptcy of the buyer, the seller retook possession of the fountain and rented it to the bankrupt's successor from month to month from February to June, when the fountain was sold at auction. It was held that such lease constituted a retaking by the seller not in compliance with the statute, and entitled the bankrupt's trustee to recover the installments paid. The contract contained a provision that, on the buyer's failure to make payments as provided, all money paid under the contract should be retained by the seller, and that it should not be necessary for it to retain the property for thirty days after retaking or to sell the same for its benefit, but on such retaking the buyer's right to comply with the terms of the contract and receive the property was expressly waived. It was held that this provision, being contrary to the express provisions of the statute, was against public policy and void. *Croze v. Liquid Carbonic Co.*, *New York Court of Appeals*, 102 *N. E.*, 573.

CONDITIONAL SALE OF SODA FOUNTAIN.—ELECTION OF REMEDIES.—A soda fountain was

sold upon a conditional sale contract for \$250 upon which \$200 remained unpaid. The purchaser, Ross, also purchased from the seller supplies for the fountain of the value of \$28.50, which sum also remained unpaid. He subsequently sold his business, exclusive of the fountain, to another, without complying with the Washington sales in bulk law (*Rem. and Bal. Code*, Secs. 5296-5300). The seller of the fountain, in reply to the purchaser of the drug business, stated that the fountain would have to be paid for by Ross, if he was good for it, but that the seller's agent would call on the purchaser of the business shortly and go into the matter. The agent called and attempted to sell the fountain to the purchaser of the business before his payment of the last installment of the price to Ross, and while he could have protected himself; but, not being able to sell the fountain to him, the seller retook possession and instituted suit against Ross and the purchaser of the business for the balance due on the contract, claiming that the latter was liable because of the violation of the sales in bulk law. It was held that the seller of the fountain having retaken it and elected such remedy with notice to the purchaser of the business that it claimed the right to recover the price at a time when such purchaser could have protected itself, was estopped thereafter to claim the right to proceed on the contract. But the fact that the seller elected to retake the fountain did not satisfy the debt for the supplies, for which it was entitled to recover against the purchaser of the business. *Stewart & Holmes Drug Co., v. Ross*, *Washington Supreme Court* 133 *Pac.*, 577.

CHAMPAGNE—MISBRANDING—IMITATION. — A wholesale liquor dealer in New York ordered five cases of champagne from a firm in Peoria, Illinois. The order was filled with cases, the outside of which were marked with designs to represent cases of champagne and contained bottles of the same shape and made to imitate an ordinary champagne bottle. The bottles were corked and dressed about the neck the same and in very close imitation of ordinary champagne bottles, having the same style of label and seal, both attached in the same manner, and on the label was the name "Special Gold Cabinet, Superior Quality," with a coat of arms on one side and the initials "H. H. S. & Co." and

on the other certain figures, but without the word "champagne." The contents of the bottles was a very cheap, ordinary, low grade of carbonated white wine. The bottles were also marked with the words "Extra Dry," when in fact the contents were not "extra dry." In a suit for condemnation of the cases it was held that this constituted misrepresentation by misbranding intended to deceive and defraud purchasers, within Section 8 of the federal Food and Drugs Law of 1906, and that the champagne was subject to forfeiture.—*United States v. Five Cases of Champagne*, 205 Fed., 817.

CONSTITUTIONALITY OF MILK ORDINANCE.—Suit was brought to restrain the enforcement of an ordinance of the city of Milwaukee providing that no milk drawn from cows outside of the city shall be brought into the city, contained in cans, bottles, or packages, unless they be marked with a legible stamp, tag, or impression bearing the name and address of the owner of the cows, and unless such owner shall, within one year from the passage of the ordinance, file in the office of the commissioner of health a certificate of a duly licensed veterinary surgeon or other person given authority by the State Live Stock Sanitary Board to make tuberculin tests, stating that such cows have been found free from tuberculosis or other contagious diseases. The certificate is required to give a number which has been permanently attached to each cow and a description sufficient for identification. The certificate must be renewed annually, and must show that the cows are free from tuberculosis or other contagious diseases.

The complaint was dismissed in the state court, and, after the judgment had been affirmed by the supreme court of the state, the case was carried to the United States Supreme Court. There it was contended that milk drawn from cows outside the city was unconstitutionally discriminated against. This contention was not sustained, as regulations relative to cows within the city forbid the sale of milk from sick or diseased cows, and contemplate inspection by the health officer, and the application by him of any known test to determine whether the animal inspected is afflicted with tuberculosis, and the removal by him of any diseased animal to a place where it will not spread infection.

It was also held that the confiscation, forfeiture and immediate destruction contemplated by the ordinance where milk does not conform to its requirements do not take property without due process of law, contrary to the fourteenth Amendment to the United States Constitution, even though the necessity of the tests be not demonstrated, and the beliefs which induced them may be disputed. The ordinance was declared to be a valid exercise of the police power of the state. The city was not required to let the milk pass into consumption and spread its possible contagion. Criminal pains and penalties would not prevent it from going into consumption. To stop it at the boundaries of the city would be its practical destruction. To hold it there to await judicial proceedings against it would be as the state supreme court said, to leave it at the depots, "reeking and rotting, a breeding place for pathogenic bacteria and insects during the period necessary for notice to the owner and resort to judicial proceedings." The judgment was affirmed.—*Adams v. Milwaukee*, 33 Supreme Court 610.

CLERKS AND TRADE JOURNALS.

Many employers not only are willing that their employes should read the trade journals, but are fully alive to the fact, that, usually, it is the employe who takes sufficient interest in his business to devote his own time to studying it, that is the employe best worth while. In other stores, however, although the trade journals come in month by month, no particular encouragement is given the employes to make use of them, and no effort is made in other ways to instruct them, to increase their interest in what they have to do, or to stimulate them to greater and more profitable effort.

The kind of clerk—the kind of salesman—who knows his business thoroughly and is not merely an order taker, is a valuable asset in your business. Such clerks are worth cultivating; and the qualities that go to make the efficient clerk are capable, in great measure, of cultivation. Set yourself, then, to help your clerks. Make it your business to see that they have a good trade journal—and use it.—*Western Druggist*.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

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A. PH. A. OFFICERS AND COMMITTEES.

Attention is called to the Official Roster, including a list of General and Council Committees, which appears in the advertising section of this issue.

Members are requested to observe whether their names and addresses are correctly stated, and to call the attention of the editor to any errors or omissions which may be noted.

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TWO NEW PHARMACEUTICAL PROFESSORS.

The catalog of the New Jersey College of Pharmacy, Jersey City, N. J., shows the names of two new professors in the faculty—J. Leon Lascoff, Professor of Pharmacy, and Otto Raubenheimer, Professor of Pharmaceutical Chemistry and History of Pharmacy. Both gentlemen are accomplished pharmacists, and leaders in the A. Ph. A. The New Jersey institution is to be congratulated upon its acquisition of two such able exponents of scientific pharmacy.

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TWO STUDENT PRIZES.

Professor R. A. Kuever of the Iowa College of Pharmacy offers to the Junior student who shall attain the highest standing in practical pharmacy a year's subscription to the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

L. C. Hopp, of Cleveland, also gives an annual prize consisting of a nomination to membership and the first year's fee of \$5.00 for the best grade in Chemistry at the Cleveland College of Pharmacy. The prize last year was awarded to graduate Earl Edward Goudy.

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A LETTER OF PROTEST.

Philadelphia, October 28, 1913.

To the Editor, Journal A. Ph. A.:

Dear Sir—I should feel myself derelict in my duty as a physician were I to permit the article on Methyl Alcohol by John C. Wallace in your October number to go unanswered. Mr. Wallace quotes "two cases of poisoning by inhalation by workmen varnishing vats." What two cases these were he does not state. The fact of the matter is that C. A. Wood (Journal A. M. A. 1912, LIX, p. 1962) has reported two deaths, besides two cases of blindness, in workmen varnishing vats with a methyl alcohol varnish: Hale (Journal A. M. A. 1901, xxxvii

[1450) has reported two cases of blindness under similar conditions: De Schweinitz (Ophthalmic Record, 1901, p. 289), one case of a painter blinded by an inhalation of a methylated spirits varnish, not in a vat but in the ordinary routine of his work; Hiram Woods (Journal A. M. A., 1913, LX, p. 1762), has reported a case of blindness following the use of methyl alcohol as a *liniment*!

In the light of these reported—and no one knows how many unreported—disasters, are the pharmacists going to stand sponsors for an agent fraught with such horrible dangers? Is the question of dollars and cents to be forever balanced against human life and happiness?

Even if we grant that these cases are rare, it seems to me that one well authenticated case should be enough to make every true pharmacist do all in his power to banish the poison *entirely* from the drug store. There is no justifiable use for methyl alcohol in or about the pharmacy, much less for its sale. The mission of the pharmacist should be to aid in the saving of human life, not in its destruction.

Yours truly,

HORATIO C. WOOD, JR., M. D.

[Resolution 6, adopted at the Nashville meeting, reads as follows:

Resolved, That the American Pharmaceutical Association go on record in favor of legally requiring methyl alcohol to be sold under a name that will differentiate it from ethyl alcohol or spirits generally, and under a poison label.

The subject was also discussed editorially in the July issue, page 817, where a case of blindness following the external use of wood alcohol was referred to.—J. H. B.]

MAKING EXCUSES.

The moment you have to make excuses to yourselves for anything you do or intend to do, that moment you are standing on a rotten piece of ice, that may break from under you at any time, and leave you struggling in very deep, cold water!—water that is full of long weeds, too, that will twist around your legs, and drag you down deeper the harder you try to swim. For it is the kind of water you have no right to be in; it was not intended for swimming, as you find when you get into it. You fellows who have been caught in the weeds well know what I am driving at and the fellows who haven't had better keep out.—Robert Lloyd.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

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THE PHILADELPHIA BRANCH.

The 1913-14 series of meetings of the Philadelphia Branch had an auspicious beginning at the first meeting which was held at the Drug Club on Tuesday evening, October 7, 1913, with President Cliffe in the Chair.

An informal dinner was served in the Drug Club Cafe, which was followed by a well-attended and enthusiastic session. Two new members were elected, Messrs. James A. Ferguson and Elmer H. Hessler.

Final action was taken on an Amendment to the By-law defining the fiscal year of the Branch, which was thereby changed to correspond with the calendar year.

Invitations offering meeting accommodations were extended the Branch by the Departments of Pharmacy of the Medico Chirurgical College and Temple University, and by the Philadelphia College of Pharmacy. Upon motion the invitations were accepted and the Executive Committee instructed to arrange and schedule the meetings to be held at each place.

Mr. Franklin M. Apple, First Vice President-elect of the A. Ph. A. tendered his resignation as the member of Council from this Branch, and Dr. F. E. Stewart was elected to fill the vacancy.

Treasurer Fischelis reported the deficit of last year wiped out and a comfortable working balance in hand.

The programme included reports of Association proceedings as follows:

"The Convention of the A. Ph. A.," by George M. Peringer.

"The Convention of the N. A. R. D.," by Mr. Samuel C. Henry.

"The Convention of the Pennsylvania Ph. A.," by Mr. R. H. Lackey.

"Joint Report—Convention A. Ph. A.," by Mr. J. W. England.

"The Convention of the A. M. A.," by Dr. F. E. Stewart.

"The National Drug Trades Conference," by Mr. Clarence M. Kline.

"The A. Ph. A. Commission on Patent Medicines," by Mr. C. E. Vanderkleed.

The reports of Messrs. England, Stewart and Vanderkleed are published in full elsewhere.

President Beringer paid an eloquent tribute to the many-sided character of the American Pharmaceutical Association and expressed his entire satisfaction with the results achieved at the Nashville Convention. Many interesting and valuable papers were read and particular interest was displayed in legislative and educational work. The speaker expressed his satisfaction with the work performed by the House of Delegates, since it facilitated materially the work of the Convention and still gave proper representation to all concerned. The speaker referred to the tendency for organizing new Sections as being a fertile topic for discussion in the Branches. He thought too great a number of Sections would be unwieldy, and too much subdivision of the topics made it difficult to maintain proper interest. The organization of a Woman's Section was a splendid thought, as such a body would unquestionably constitute a valuable aid in maintaining and arousing new interest in the work of the A. Ph. A.

The speaker thought too few practical pharmacists were in the habit of attending such conventions, and a special effort should be made in the direction of a fuller representation at the meeting next year. This could be accomplished, he thought, by arousing more interest in local Branch matters; and in this connection he suggested an interchange of ideas by those Branches already established, and bespoke the interest of organized Branches in establishing others. He referred to the importance of keeping up interest in propaganda work. It was through efforts along this line that the confidence of the physician could be gained by the practicing pharmacist, and in this connection he spoke of the advantages of holding joint meetings of pharmacists and physicians. The

speaker made cordial reference to the good reception provided for the visitors to the Nashville Convention and felt that they had been well entertained.

Mr. Henry, of the Executive Committee of the N. A. R. D., thought the Cincinnati Convention had been the most successful of any yet held by the N. A. R. D. The organization indicated that it was stronger than ever and was bound to go forward and make its influence felt for the good of the retail trade generally. He expressed himself as believing that the outlook for the future of the N. A. R. D. and its members was extremely encouraging. Legislation was aptly discussed with keen interest and the speaker expressed his satisfaction with the attitude of the body towards the National Anti-Narcotic Bill. The speaker referred to the earnest efforts made by the P. A. R. D. delegation to have the 1914 Convention of the N. A. R. D. held in Philadelphia. He described the social features of the Convention as being all that could be desired and the political side as having its usual interest to those politically inclined.

Mr. Kline, reporting for the National Drug Trades Conference, gave an interesting history of the inception of this body and described it as being a child of the A. Ph. A., conceived at the Denver Convention. The creation of this body, in the mind of the speaker, was well planned, in that it gave opportunity to get the ideas of allied drug bodies on relevant topics, at the same time and place, doing away with the necessity for voluminous correspondence and the consequent loss of time. He said that the first actual convening of the body was over the Harrison Bill. He described the facility with which the various elements, having an interest in this legislation, were enabled to arrange for hearings, present their arguments and have prompt disposition made of the same. In this connection the speaker made graceful recognition of the courtesies extended to the N. D. T. C. by Representative Harrison, whom he described as a liberal and broad-minded legislator. While the opportunity so far had been limited, the N. D. T. C., the speaker thought, would exert a powerful influence in the direction of securing uniform State legislation.

Mr. Lackey, President of the Penna. Ph. A., said that the last Convention of the Pennsylvania body had been most profitable and

interesting. Many valuable and interesting papers were read and followed by instructive discussions. Instructive reports were presented by the various Committees, the speaker making special reference to the report on Drug Adulteration by Prof. Vanderkleed. The speaker also complimented Secretary Heffner upon the promptness with which the proceedings of the Convention were placed in the hands of the members. While it appeared, during the Convention, that a marked advance had been made in Anti-Narcotic legislation, this was subsequently nullified by the Governor's veto. Entire harmony reigned throughout the Convention and the visitors were well entertained.

The reports were discussed at length by those present, especial interest centering about the need for propaganda work, and the proposed A. Ph. A. building referred to in Mr. England's report. In this latter connection a motion by Mr. Gordon was unanimously carried. The motion authorized the President to appoint a committee from this Branch to consider a favorable location for an A. Ph. A. headquarters. A reference to the advisability of establishing headquarters at the National Capital brought Messrs. Beringer, Kraemer and others to their feet with an eloquent appeal in favor of Philadelphia. Following this patriotic outburst, another motion, by Dr. Fischelis, was adopted. This motion directed the Philadelphia Branch Committee on A. Ph. A. Building to inquire into the facilities offered by, and the advantages resulting from, the establishment of the A. Ph. A. Building in Philadelphia. The possibilities involved in having this stronghold of pharmacy for National headquarters was discussed enthusiastically until a late hour.

In discussing propaganda work, Mr. Henry stated that more than half of the propaganda literature issued had not brought results. This was not due to any fault in the literature, but because of the indifference of the retail druggists.

Among those taking part in the discussions were: Messrs. Apple, Gordon, Matusow, Subin, Fischelis, Minehart, LaWall, Pollard, Cook, Lowe, Leedom and others.

AMERSE HUNSEBERGER, Secretary.
1600 Spruce St., Philadelphia, Pa.



NASHVILLE BRANCH.

The regular monthly meeting of the Nashville Branch of the American Pharmaceutical

Association was held Thursday afternoon, October 9, in Furman Hall at Vanderbilt, with President J. O. Burge in the Chair. After the reading of the minutes, W. R. White, Chairman of the Program Committee, submitted the following subjects for the ensuing term: "Articles for Quick Dispensing," "Window Dressing," "Prescription Incompatibilities," "Stopping Leaks in Business," "Board of Pharmacy Questions," "Shorter Hours," and "Bacteriological Products."

Dr. Lucius P. Brown then gave a very exhaustive explanation of the recent laws passed by the legislature that affect the pharmacist. He first told of the passage of a law identical with the Shirley amendment to the national pure food law which prohibits the use of false claims of the curative and therapeutic properties of medicines. He then told of the passage of a net weight law identical with the federal law on this subject, both of which go into effect September 3, 1914.

The amendment to the sanitary food law, altering the administrative section, was then explained. Justices of the peace can try the case, but if the defendant does not like the decision he is entitled to a new trial with new evidence in the circuit court. The commissioner is authorized to apply to the district attorney and secure an injunction closing a business on the grounds of being a nuisance. Dr. Brown then referred to the amendment to the milk bill which defines standards and prohibiting the presence of any visible dirt in milk after filtering through cotton.

The weight and measure law, a very lengthy measure, was then explained. Provision is made in this law for state, county and city sealers, all to be employed on a salary basis, the fee system being abolished.

Sealers are made special deputies, and it is their duty to see that all weights and measures in use or to be sold are correct. The president of the state university is given charge of the standards and will test any weights and measures at small cost.

The most important bill, according to Dr. Brown, passed was the anti-narcotic law, which goes into effect January 1, 1914. This law is to be enforced by the pure food and drug commissioner and the secretary of the state board of health. This law relates to the sale of preparations or derivatives of opium and coca and provides that they can be sold

only on the prescription of a licensed physician to be filled on the same day written, and a complete record of all sales is to be kept on file. Preparations containing less than two grains of opium in each ounce are exempt. No druggist is allowed to have more than five ounces of cocaine on hand at a time, and is allowed to sell it only in solution which shall not be stronger than five per cent. Physicians, veterinarians and dentists are exempt from the law, except that they must keep duplicates of the prescriptions they write.

This law is modeled after the Harrison bill which has passed in the House of Representatives, and is expected to pass the Senate soon.

Dr. Brown cheerfully answered the many questions asked him, and was heartily thanked for the lecture.

Dr. J. O. Burge then read a report of the recent meeting of the International Pharmaceutical Congress, held at The Hague, after which the Branch adjourned to meet again November 13 at the same place.

W. R. WHITE, Secretary.



CINCINNATI BRANCH.

The regular monthly meetings of the Cincinnati Branch of the A. Ph. A. were resumed October 14th, 1913, at The Lloyd Library.

Prof. John Uri Lloyd presided.

After disposing of the routine business, the President introduced the Speaker of the evening, Dr. J. H. Landis, Superintendent of the Cincinnati Health Department, who chose for his subject, "The Organization and Work of the Cincinnati Health Department."

Dr. Landis spoke of the different divisions of his department, laying particular stress upon the milk supply and dairy inspection, citing numerous cases, where the work of the department bore fruit in furnishing a purer supply of the product, cleaner stables and healthier cows.

He also called particular attention to our present water supply from our new fifteen million dollar water works, citing, however, the deplorable condition of Millcreek, which has been for years polluted by the waste allowed to be discharged into this stream by the factories, located along its banks, causing untold inconvenience and serious sickness to the inhabitants of the adjacent territory.

The doctor further emphasized the good

work done by the department for the inspection of food in general, especially meats and market supplies, as well as Confectionery stores, lunch stands, soda fountains and other places, where food and drink are offered for sale or given away.

He also called attention to the efficient manner and promptness, with which cases of infectious diseases are handled, such as smallpox, diphtheria, scarlet fever, etc.

Furthermore he commends the good work done by his inspectors, relating to the Dental Inspection of the children in our Public Schools.

Referring again to the subject of milk, he praised the thorough inspection of milk and the establishment of municipal milk stations, particularly in the poorer sections of the city.

Child Hygiene is given some attention, but the Doctor points with great pride to the well equipped and managed Municipal Laboratory and shows what a valuable aid the Laboratory furnishes to the Physician, in examination of sputum, diphtheria cultures, blood counts, etc.

Another valuable division of the department is the Division of Vital Statistics, which enables us to obtain proof of birth, proof of naturalization, age of consent, age of working and certificate for burial.

Another very important division is the house to house canvass by the Sanitary Officers of the Department.

While I have given just a few of the major points, elucidated by Dr. Landis, he went into details, giving statistics and results accomplished by his department.

The lecture was well attended, a number of the students of the Cincinnati College of Pharmacy and the Eclectic Medical College being interested listeners as well as by a goodly number of members and their families of the Cincinnati Branch.

At the conclusion of the lecture, President Lloyd responded heartily on behalf of the Association, thanking the Lecturer for his kindness and courtesy in giving us such an instructive exposition of a very interesting subject.

Further brief responses were given by Mr. F. H. Freericks, Prof. C. T. P. Fennel, Mr. Louis Heister and others, each voicing their appreciation of the very efficient manner with which Dr. Landis treated the subject.

CHAS. A. APMAYER, Secy.

SAINT LOUIS BRANCH.

At the second annual meeting of the Saint Louis Branch of the American Pharmaceutical Association the following officers were elected for the ensuing year: J. A. Wilkerson, president; A. C. Schulte, first vice-president; O. J. Cloughly, second vice-president; Julius C. Hoester, secretary; J. W. Mackelden, treasurer; Advisory Board, N. Emory Williams, Francis Hemm and Frederick W. Sultan.

The annual address of the retiring president contained a number of suggestions and recommendations some of which were adopted by the Branch.

In the discussion of the president's suggestions, Mr. Arthur Schulte remarked that in his estimation the Branch had not been a decided success for the reason that the meetings were not as well attended as they should have been, and that a number of the older members have shown very little interest in the organization. Continuing Mr. Schulte recommended that we endeavor to inculcate more enthusiasm in the older members, especially those who take an active part in the parent body.

The remainder of the evening was taken up in discussing general plans for the next year's work.

JULIUS C. HOESTER, Secretary.



NEW YORK BRANCH.

The first of the season's meetings of the New York Branch of the American Pharmaceutical Association was held on the evening of October 13th, Vice-President H. V. Army presiding.

For the committee on legislation, Prof. W. C. Anderson reported that the only State legislative matters of interest were contemplated measures. He mentioned two of these. One was that proposed in a resolution at the conference during the drug trade exhibition, in which it was sought to put all registered pharmacists, physicians, and dentists into the employ of the State at an annual salary of from \$1200 to \$3000. The other measure was advocated by a medical organization of Brooklyn and would make it unlawful to refill any prescription. Professor Anderson did not believe that it was necessary to have a law to procure respect for the prescriber's wishes relative to refilling.

In considering national legislation, Pro-

fessor Anderson reported that the Harrison anti-narcotic bill was dormant in the Senate. Although he was of the opinion that the criticism of the measure indulged in by the National Association of Retail Druggists at its Cincinnati Convention had little if any part in delaying the passage of the bill, he expressed a regret that the drug trade had not more strenuously advocated its enactment. It was, in his opinion, because of the passive opposition of interested trades that the federal authorities had issued the treasury decision regulating the traffic in cocaine. If this venture proved feasible, he predicated an extension of the supervision of the government until it embraced all narcotics and probably many other drugs.

This report was discussed by Messrs. Diekmann, Diner, Craig, Lehman, Raubenheimer, Hostmann, and Army. Subsequently the report was duly adopted.

As chairman of the committee on the progress of pharmacy, Dr. G. C. Diekmann outlined the requirements and the curriculum of the department of pharmacy of the University of the Philippines. The entrance requirements are 15½ counts for the course leading to the degree of graduate in pharmacy, a three-year course with daily sessions during eight months of the year. The degree of graduate in pharmacy and two years' study in German are prerequisite to the higher course of four years, which leads to the degree of bachelor of science in pharmacy. The report also had to do with the production of radium in this country and the application of radium emanations in therapy.

Following a brief discussion by Messrs. Wimmer and Raubenheimer, the report was adopted.

Reporting as chairman of the delegates to the Nashville meeting of the American Pharmaceutical Association, Hugh Craig recounted briefly the transactions of that convention. He told of the discussion of anti-narcotic legislation, and the creation of a proprietary medicine commission and a committee on educational standards. He outlined the resolutions adopted and also those defeated. The striving of the commercial section for better recognition was related and some shortcomings of the method of nominating officers were pointed out. Mr. Craig also stated the results of the elections and the nominations.

A brief report of the 1913 meeting of the

New York State Pharmaceutical Association was also made by Mr. Craig. In this was reviewed the action of the Association relative to the ownership of pharmacies by licensed persons alone, the adoption of a distinctive name for methyl alcohol, the certification of pharmacies, the creation of a State department of pharmacy, and the safeguarding of the sales of poisonous tablets.

Otto Raubenheimer reported as a delegate to the meeting of the New Jersey Pharmaceutical Association. He laid particular stress upon the number and excellence of the papers presented. Attention was given to the report of the board of pharmacy and the fact that only about one-third of the applicants examined for registration were successful. Mr. Raubenheimer stated also that the Association planned to work strenuously for an education prerequisite for registration.

Messrs. Dickman and Hostmann spoke relative to several points in Mr. Raubenheimer's report. Dr. Dickman said that the difficulty of the New Jersey examinations had been attributed to the fact that many questions were based upon long practical experience which, obviously, the unlicensed person seldom had. Professor Hostmann told of the activity of the New Jersey Board against the illicit traffic in narcotics.

A synoptical resumé of the transactions of the National Association of Retail Drug-gists at the Cincinnati Convention was given by Prof. W. C. Anderson. Particularly he dwelt upon the legislative discussions. He also gave the gist of the principal resolutions adopted.

Mr. Raubenheimer told briefly what had been done at the Drug Trade Exhibit and Conference.

Criticizing the action of the parent association in disapproving a resolution asking for the recognition of the name "castile soap" as a synonym for the pharmacopœial soap, Prof. J. L. Mayer declared that there was a need for some standard for castile soap and better tests for the determination of the official soap. John Roemer agreed and offered a resolution calling upon the pharmacopœial revision committee to adopt some standard for castile soap. After some affirmative comment by Messrs. Raubenheimer and Craig, this resolution was passed.

HUGH CRAIG, Secretary.

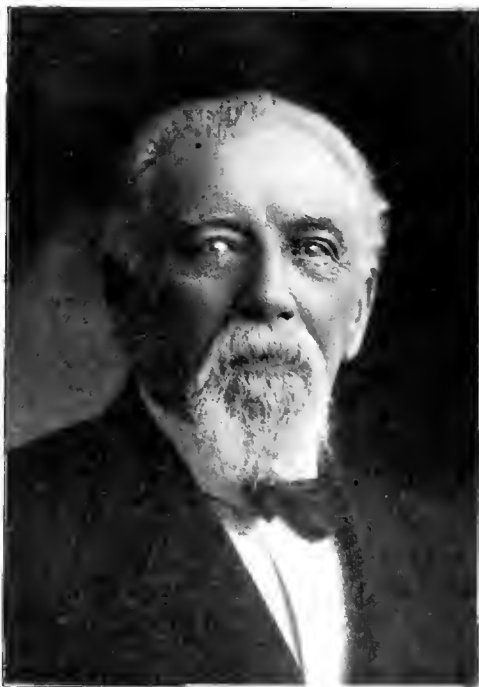
Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



WILLIAM THEODORE WENZELL

William T. Wenzell, of San Francisco, died at the age of eighty-four years, on July 31, 1913, at Lane Hospital. He had been actively engaged in his work as chemist in



WILLIAM T. WENZELL.

the Appraiser's Stores, San Francisco, up to the time of his short illness.

Mr. Wenzell was born at Muhl Dorf, Germany, in 1829, and came to this country when a child, graduating from the Philadelphia College of Pharmacy in 1855. In 1864 he received the M. D. degree from the La-Crosse Medical College, Wisconsin. He also received the M. D. degree from the Medical College of the Pacific in the year 1876. In

1872 he was made Professor of Chemistry and Toxicology of the California College of Pharmacy, which position he held until the year 1898. From 1875 to 1880 he held a similar chair in the Medical College of the Pacific, also in the Cooper Medical College from 1897 to 1902. In 1899 he was appointed a chemist to the United States Appraiser's Stores, which position he held up to the time of his death. He has contributed a number of valuable papers to American Pharmacy, upon the following subjects: "Abietene" (A. J. P., 1872, 342), "Commercial Chloride of Prophylamia" (A. J. P., 1863, 101), "Corydalis formosa" (A. J. P., 1866, 206), "Ergota," (A. J. P., 1864, 193), "Estimation of Mono and Bicarbonate of Sodium" (A. Ph. A. Proc., 1894, 277), "Euonymus Atropurpureus" (A. J. P., 1862, 385), "Olea cacta" (A. J. P., 1863, 222), "Pharmacy in California" (Proc. A. Ph. A., 1870, 125, 198), "Preparation of Diluted Alcohol" (Proc. A. Ph. A., 1879, 705), "Preparation of Phosphoric Acid" (Proc. A. Ph. A., 1882, 556), "Report on Progress of Pharmacy" (Proc. A. Ph. A., 1871, 129), "Strychnia Test" (A. J. P., 1871, 385), "A Contribution to the Knowledge of Coloring Principles of Flowers" (A. Ph. A. Proceedings, 1889, 244), Cinchoquinine (A. J. P., 1879, 342).

He was a life member of the American Pharmaceutical Association, joining in 1870.

J. W. E.



EVAN T. ELLIS.

Evan Tyson Ellis was born in Philadelphia on August 10, 1826 and died in the same city on October 11, 1913. He was the oldest alumnus and member of the Philadelphia College of Pharmacy, the last surviving charter member of the Philadelphia Photographic Society; and for many years a prominent figure in the wholesale drug circles of Philadelphia.

Mr. Ellis came of sturdy Quaker stock, his father, Charles Ellis, being a well known Orthodox Quaker, a leading wholesale druggist and an official, in various capacities, of the Philadelphia College of Pharmacy for more than forty years. He received his education at Haverford College from which he was graduated with the class of 1844 and was one of the oldest members of the Haverford College Alumni Association. He then studied pharmacy, attended the courses of

instruction at the Philadelphia College of Pharmacy, graduating with the class of 1847. The subject of his thesis was "Extract of Valerian."

After he was graduated, Mr. Ellis went into partnership with his father, Charles Ellis, in Philadelphia, and together they built



EVAN T. ELLIS.

up a large wholesale drug business, under the name of Charles Ellis, Son and Co.

During the Civil War he served in the Hospital Department of the U. S. Army.

He took a deep interest in Pharmacy and the Philadelphia College of Pharmacy, being a life member and serving as a member of the Board of Trustees for twenty years. He was the oldest living member of the Alumni Association of the Philadelphia College of Pharmacy. He was a life member of the American Pharmaceutical Association, becoming a member in 1857.

Shortly after the Civil War he was married to Miss Martha Shewell, daughter of the late William and Rebecca Shewell, of Philadelphia.

Mr. Ellis was a life long member of the Orthodox Meeting of the Society of Friends, Philadelphia. Mrs. Ellis died in 1895. Three

sons survive, Charles, Evan Tyson, Jr. and William Shewell Ellis.

Evan T. Ellis was noted for his thoughtfulness and kindness to his family and friends, particularly to those who were in the drug business and who had fallen by the wayside in the struggle for existence. His life, after retiring from business, was devoted to good works, he did not rest content by contributing a handshake or pleasant smile to needy unfortunates, but he would do his utmost in every case to procure situations for them or send them food, medicine or help of a practical character.

The funeral of Mr. Ellis was held on October 14, 1913, from the residence of his son, Evan Tyson Ellis, Jr., 4728 Hazel Avenue, West Philadelphia, being attended by representatives from the organizations with which the deceased had been connected, and many friends and relatives.

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H. W. CARTER.

Harlen Wilson Carter, one of the oldest and most prominent pharmacists of Indi-



H. W. CARTER.

anapolis, died at his home on September 6, 1913, of brain trouble. He has been in business for over twenty years. He was a man of high character, diligent in business, and beloved and respected by all who knew him. He became a member of the American Pharmaceutical Association in 1908. He leaves one son, Harlen, now in the Philippine Islands.

Council Business

COUNCIL LETTER No. 4.

PHILADELPHIA, Oct. 15, 1913.

To the Members of the Council:

Motions No. 4 (Election of Applicants Nos. 1 to 8 inclusive), No. 5 (Election of Chicago Representative to the Committee on Transportation), and No. 6 (Election of Representative to Committee on Transportation from St. Paul or Minneapolis), have each received a majority of affirmative votes.

Charles B. Whilden, of San Francisco, is no longer a member of the American Pharmaceutical Association, and it is in order to elect a representative to the Committee on Transportation from San Francisco.

Motion No. 7 (Election of Representative to Committee on Transportation from San Francisco). Moved by F. M. Apple, seconded by J. W. England, that Fred I. Lackenbach, of San Francisco, be elected a member of the Committee on Transportation to represent San Francisco.

Francis Hemm, elected a member of the Committee on Unofficial Standards at Nashville, to succeed C. E. Vanderkleed (term expires 1913) declines to serve.

Motion No. 8 (Election of Member of Committee on Unofficial Standards). Moved by J. W. England, seconded by G. M. Beringer, that John G. Roberts, of Philadelphia, be elected a member of the Committee on Unofficial Standards, succeeding Francis Hemm.

Whereas, the "Fidelity and Deposit Company of Maryland" has succeeded the "American Bonding Company of Baltimore," which has heretofore bonded the Treasurer of the Association,

It is moved by J. H. Beal, seconded by H. M. Whelpley, that the bond of the Treasurer be renewed with the said Fidelity and Deposit Company of Maryland. This motion will be regarded as *Motion No. 9. (Renewal of bond of Treasurer.)* Appropriation for bond was made last January, so this will not need to go to Finance Committee.

The Philadelphia Branch of the American Pharmaceutical Association, at its meeting on October 7, elected Dr. Francis E. Stewart to

succeed Franklin M. Apple (term expires 1915) as a member of the Council from the Philadelphia Branch; Mr. Apple resigned by reason of his election as First Vice President of the Association.

General Secretary Beal writes:

"I enclose herewith communication from the Chamber of Commerce, U. S. A.

"While it might be desirable to lend our moral support to the project, I do not see how, being principally a professional organization, we would be justified in making the annual contribution required of members.

"If the Chamber had a list of associate members consisting of such societies as ours, and from which only a nominal fee was exacted, I would be in favor of taking out such an associate membership."

The communication reads as follows:

Mr. J. H. Beal, Secretary,

The American Pharmaceutical Association,
Scio, O.

Dear Sir: In my judgment the business interests of the country have come upon a new day. The old day of buying political favor is gone, and the old day of extensive lobbies is passing, I expect, never to be returned. The new day is a day when the business interests of the country through an organization which they support and through which they speak, shall make known to those who are charged with making and interpreting our laws, the needs of American Business, the safeguards it requires and the protection it deserves.

Every worth-while force today is an organization force, and the finer the organization, the greater its efficiency. Labor is thoroughly organized; the agricultural interests of the country are well organized, and these organizations have a National force. The commerce of the country is organized into independent units, capable of speaking for a single community or a single line of business, but there is no organization in this country, save the Chamber of Commerce of the United States, capable of expressing the business sentiment of the entire country nor competent to unify the business sentiment upon the important economic questions and to safeguard its position in legislative halls.

I frankly believe that the Chamber of Commerce of the United States is the most important business factor to the commercial interests of America that exists today.

That four hundred local commercial associations and national trade bodies, representing forty-six states of the Union, are now affiliated with, and giving to the National Chamber their hearty support, demonstrates that this belief is shared by several hundred thousand representative business men of the country who are members of these affiliated associations.

I further believe that members of your organization will recognize the value of this movement and will exhibit the same splendid, unselfish interest in its ultimate success as those who are now giving it their support, once they fully comprehend its plans and purposes. Under separate cover, literature that will enable you to present to your directors such a comprehensive view, has been sent to you. The enclosed application bears on its reverse side a schedule of dues that will easily show just what your dues will be once you are a member of the National Chamber.

Certainly the splendid success of the Chamber of Commerce of the United States since its beginning in April, 1912, is a sufficient argument for your directors to no longer delay affirmative action.

Will you, please, give us word at your early convenience of the action of the directors in this matter. I will deeply appreciate the courtesy.

Very truly yours,
(Signed) H. A. WHEELER,
President.

It may be added that organizations are divided by the Chamber of Commerce into classes according to income, the dues ranging from \$10 for an income of \$2000 or less, to \$700 for an income of \$120,000 or more.

J. W. ENGLAND,
Secretary of Council.

415 N. 33d St.

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U. S. PUBLIC HEALTH SERVICE.

(Recent Changes of Stations, etc.)

List of changes of stations and duties of commissioned and other officers of the United States Public Health Service for the seven days ended October 8, 1913:

Stiles, C. W., Professor of Zoology. Directed, at the request of the state health authorities, to confer with local health boards and present lectures relative to measures nec-

essary to improve sanitary conditions at various places in North Carolina. Oct. 3, 1913.

Stiles, C. W., Professor of Zoology. Detailed to represent the Service at the First Annual Conference of the State, County and Municipal Health Officers to be held in Little Rock, Ark., Oct. 28-29, 1913. Oct. 16, 1913.

Phelps, E. B., Professor of Chemistry. Directed to proceed from New York, N. Y., to Boston, Mass., and vicinity and return to New York upon completion of the duty, to advise with local health authorities regarding methods of investigating sanitary administration. Oct. 20, 1913.

BOARDS CONVENED.

Boards of medical officers convened for the physical examination of applicants for appointment as Assistant Surgeon and for the presentation of questions for the written examination to meet Oct. 20, 1913, as follows:

Marine Hospital, Boston, Mass., Senior Surgeon Fairfax Irwin, Chairman; Surgeon H. W. Wickes, Recorder.

Marine Hospital, New Orleans, La., Surgeon J. H. White, Chairman; Passed Assistant Surgeon A. D. Foster, Recorder.

Marine Hospital, San Francisco, Cal., Surgeon R. M. Woodward, Chairman; Passed Assistant Surgeon J. R. Hurley, Recorder.

Marine Hospital, Chicago, Ill., Surgeon J. O. Cobb, Chairman; Assistant Surgeon D. S. Baughman, Recorder.

Marine Hospital, St. Louis, Mo. Surgeon M. J. White, Chairman; Acting Assistant Surgeon H. C. Wakefield, Recorder. Oct. 1, 1913.

Official: RUPERT BLUE,
Surgeon General.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

LUDMAN, FRED,
From Camp McGrath, P. I.
To Residence Unknown.

SMITH, RENNA,
From Ft. Worth, Texas.
To Residence Unknown.

FORD, C. M.,
From Denver, Colo.
To Box 114, Cambridge, Mass.

BATTERSON, R. BLAINE,
From The Dalles, Ore.
To Napavine, Wash.

CAMPBELL, ANDREW,
From Greensburg, Pa.
To 530 Duquesne Way, Pittsburg, Pa.

OVERSTREET, W. P.,
From 5900 Plymouth Pl., St. Louis, Mo.
To 4536 Morgan St., St. Louis, Mo.

GOLDSTEIN, JACOB,
The Savoy Pharmacy, Assouan, Cairo,
Egypt.

KEEPING UP A "FRONT."

Under all circumstances, always keep up a good front. When things are going the very worst way for you, keep your chin up and a smile in your eye! "Laugh, and the world laughs with you! Weep, and you weep alone!" You'll get a whole lot more for being bright than you will for going around like an undertaker. Any kind of a chump can grin and look pleasant when everything is going his way; but it takes a brave, strong-hearted fellow to keep up a front when everything is going wrong, and the whole world seems dead against him! As I told you before, "Grin and bear it! You don't have to grin, but it is more gentlemanly to do so, and you'll have to bear it anyway!" Most people instinctively try to avoid trouble and sorrow, especially when they see it in some one's face; but they are attracted to a cheerful fellow; and when they find out that he is being cheerful under adverse circumstances, they not only admire the fight he makes, but they help him out.—Robert Lloyd.

WHAT THE A. PH. A. DOES FOR PHARMACISTS.

For more years than any of us except the very oldest can remember, the American Pharmaceutical Association has been blazing the way for pharmacy in this country. It is still engaged in this praiseworthy business, and probably will be when the present generation has gone to join the leaders who in eighteen hundred and fifty-one issued a call for a meeting of their fellows to be held at Philadelphia the following year. During the three score and more years that have elapsed since the grand old association was formed, many pharmaceutical bodies have sprung up, flourished for a while, and dropped out of sight when the object for which they were formed either had been accomplished or proved too elusive to warrant further pursuit. The American Pharmaceutical Association, founded on eternal and immutable principles, stands today as fresh and hopeful as it did the year it was organized, and is stronger numerically and financially than it has ever been before.

Few, if any realize what this institution has done in the interest of pharmacy, what it means for pharmacy now, what the result of its effacement would be. It has caused the enactment of federal laws to restrict the importation of low-grade drugs and chemicals; it is mother of the State associations, which, in turn, have brought about the passage of pharmacy laws and the creation of pharmacy boards; it has encouraged better education for pharmacists; it has enriched pharmaceutical literature by providing for original investigations in chemistry, botany and operative pharmacy, and drawing out papers on the same; it has stood for a high commercial standard in the conduct of the drug business; and in hundreds of ways it has made pharmaceutical history, and not only made it, but adopted means by which its records may be preserved for the benefit of generations yet unborn. To specify even roughly the principal things accomplished for pharmacy by the American Pharmaceutical Association would be to crowd from this issue of the CIRCULAR all other matter.

Shortsighted indeed is the man who will not put out a plant unless he is assured that he will be able to gather fruit from it before the end of the season; much to be commended is the farmer who begins his work on the prairies of the Northwest by planting trees which in time will grow up and protect him and his family and his stock from the raging elements. Likewise is that druggist shortsighted who will not lend his aid and moral support to an enterprise which does not promise him large and visible returns each year; rather should he be glad to take part in maintaining an organization which has furnished his vocation with a tenable position among the callings of men, and will continue to protect it while he lives, and when he dies will make it of greater honor and profit to those who are to come after him.—*Druggists Circular*.

HAPPINESS COMES IN SPOTS.

Happiness comes in spots, like the springs of water in the desert, and you ought to make the most of it when you come to one, for there's bound to be a stretch of desert between.—*Robert Lloyd*.

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The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

SOME OF THE OBJECTIONS TO THE HARRISON BILL.

AT the time this is written (November 15) word comes from Washington that the so-called Harrison Bill (H. R. 6282), which has so long slumbered peacefully in committee, is about to be dug up and placed on the Senate Calendar, though it does not seem possible that the measure can be finally disposed of during the present session of Congress.*

It is well understood that under our dual form of government each state has exclusive jurisdiction in police matters, or the power to regulate its own internal affairs without outside interference, so far as such regulation does not affect the rights of other states or the rights of the Federal Government.

This supremacy of the state in policing its own affairs is qualified, however, by the fact that Congress has power to levy taxes within the states, and to regulate interstate commerce, and in the exercise of these two powers may incidentally interfere to a material extent in strictly *intrastate* affairs.

In consequence of the constitutional limitations upon the powers of Congress it was necessary to construct the Harrison Bill so that it would constitute either a regulation of interstate commerce or a measure for the creation and collection of internal revenue.

For what seemed to be good and sufficient reasons it was decided to draught it as a revenue measure, and as such it must mainly be construed, although the

*An analysis of the bill was given in an editorial in our July issue, pages 818-821, to which the reader is referred for more detailed information concerning its various provisions.

validity of some of its minor provisions rests upon the power of Congress to regulate interstate commerce.

Considering the difficulties natural to the draughting of a bill dealing with such an important subject, and at the same time keeping within constitutional limitations, it is not remarkable that there should be some radical differences of opinion as to the efficiency or expediency of its several provisions. Consequently, while holding the views expressed below, the writer does not intend to reflect upon either the honesty of purpose or good judgment of any who may hold quite different opinions.

The idea kept in mind by the National Drug Trade Conference in draughting its modification of the original Harrison Bill was expressed in the resolution adopted at the second meeting of that Conference, April 9, when it was resolved:

"That it be the sense of this Committee that the bill is not intended, and ought not to be intended, to regulate sales to consumers, but only to trace habit-forming narcotic drugs to the hands of the last distributor, and that the regulation of the sale of such drugs to the consumer in intrastate commerce should be left entirely to state, territorial and other local laws."

This idea of non-interference with the police powers of the state was adhered to throughout, and is the idea which was also in mind when the resolution of the A. Ph. A., adopted at Nashville, was draughted, which says:

"That the American Pharmaceutical Association endorses and approves the Federal measure known as the Harrison Bill, H. R. 6282, * * * * * as a reasonable and effective measure to provide the means of tracing the principal habit-forming narcotic drugs from the time of their introduction into the United States until they reach the hands of the physician and the retail druggist."

With this thought before us let us consider how well or how illy the expressed purpose of the bill is carried out.

Section 1 provides that, "every person who produces, imports, manufactures, compounds, deals in, dispenses, sells, distributes or gives away opium or coca leaves, or any compound, manufacture, salt, derivative or preparation thereof shall register with the Collector of Internal Revenue of the District" as a "dealer" in the said drugs, and pay a special tax of \$1.00 per annum.

It will be observed that, by its terms, this section requires physicians to register if they dispense, sell or distribute any of the articles covered by the Act,* but that it does not require them to register if they merely prescribe them, since a prescription addressed to a druggist for the delivery of a drug could not be regarded as a dealing in the said drugs any more than the delivery of a check on a bank could be construed to be the conduct of a banking business.

To this extent, then, the bill tends to encourage physicians to prescribe rather than dispense, but since all physicians are compelled to dispense the named drugs on occasion, it is practically necessary that they be registered as dealers.

It will be observed also that there is nothing in this section to prevent any person from registering as a dealer, upon the payment of the one dollar tax, and thus be entitled to obtain the official order blanks provided for in the following

*i. e.—If they dispense them in larger proportions than the excepted quantities specified in Section 6.

section, and thereby be able to secure any quantity of the narcotic drugs, and either use them himself, or dispose of them to any other person who is also registered as a dealer.

This liberty of registration has caused some persons to hastily condemn the bill as worthless, losing sight of the fact that its expressed purpose is only to trace the drugs in commerce, and of the further fact that the Federal Government cannot accept the tax from some persons and refuse to accept it when tendered by others, and that it cannot control the *intrastate* sale of these drugs any further than such control is necessary for the collection of the prescribed tax. If the bill went beyond these limits and attempted to limit registration to certain classes of citizens, or to control the sale of the drugs to any greater extent than necessary to insure the collection of the tax, such provisions would not only be void in themselves but might have the effect of rendering the entire act unconstitutional and void.

While the theory of the bill is thus to trace and not to control sales, it will, if enacted, have a strongly deterrent effect through the requirement of registration, the use of the official order blank and the publicity and exposure which it provides. The physician or druggist who is willing to sell "dope" on the sly will hesitate when he knows that every fraction of an ounce which he buys can be traced to him, and that the state or other officer acting under local law may ask him for an accounting of the manner in which it has been distributed. Of course, if the state laws are inefficient, or if the local authorities are lax in their enforcement, the main object of the Federal enactment will be largely nullified, but the responsibility would not rest with the Federal Act. In other words, it will be "up to" the states to see that the good effects of the national law are realized.

Section 2 provides that, except as provided below, the sale, delivery, etc., of the named drugs can be made only on an order written on an official form obtainable from the Collector of Internal Revenue of the district, and consequently no one can purchase the drugs unless he has registered as a dealer and procured the necessary order blanks. The original order must be preserved by the person who supplies the drug, and a copy must be preserved by the person who gives the order for a period of two years, and both the order and copy must be open at all times to inspection by Federal officers and agents, and by officers charged with the enforcement of any state law or local ordinance regulating the sale of narcotic drugs.

Three classes of cases are provided where the use of the official order blank is *not* required:

(a) In the dispensing or distribution of the drugs by physicians, dentists or veterinarians, registered under the act, in the course of their professional practice only, and only when personally attending upon the patient to whom dispensed.

(b) In the sale, dispensing or distribution by a pharmacist in pursuance of a written, signed and dated prescription issued by a physician, dentist or veterinarian, registered under the act, the prescription to be preserved for two years, and open to inspection by the same officials as are entitled to inspect the preserved orders and copies provided for in the first part of the section.

(c) To the sale, exportation or delivery of the drugs to persons residing in

a foreign country, who for obvious reasons could not register as dealers in the United States.

Among the objections which have been offered to exceptions "a" and "b" are the following:

It is claimed that they discriminate unjustly between physician and pharmacist by permitting the latter to dispense only on an order written on the official form, or on a prescription, while the physician may dispense without either, the inference of this objection being, either that the pharmacist should be relieved from the official order blank and prescriptions requirements, or else that the same requirements should be imposed upon the physician, dentist and veterinarian. To this it may be answered:

First. That it certainly cannot be considered much of a hardship to require the pharmacist to preserve his prescriptions for narcotic drugs, since he would do that anyway as a detail of professional practice, and besides, the state law would make the requirement if the Federal law did not.

Second. It would be unjust to require the physician, dentist, or veterinarian to demand either a prescription or order blank from their patients. In most cases it would be impossible for such patients (always in the case of the veterinarian) to furnish these, and besides patients are not dealers but consumers, and the theory of the bill is to leave the distribution of the drugs to consumers to the regulation of state laws.

It is furthermore claimed that the discrepancy in the manner in which pharmacist and physician may sell constitutes a sufficient inequality in the operation of the law to make it unconstitutional. But this does not seem to necessarily follow. The bill does not prevent the pharmacist from selling to exactly the same persons that the physician may sell to, but only provides for a *different method of evidencing the sale*.

Until the Supreme Court shall have passed upon the matter, it would not be wise to assert unqualifiedly either that the law proposed by the bill would be unconstitutional, or that it would not. In nearly every case it decides the United States Supreme Court finds itself in opposition to the strongly asserted opinions of one-half of the lawyers engaged.

Without making any strong assertions either way, there are certain considerations that may help us to estimate the probable view of the courts:

First. The presumption is always in favor of the constitutional validity of an act, and courts will not declare a law invalid because of trivial or frivolous reasons, i. e., for reasons which do not work a positive hardship, or do not tend to establish a dangerous precedent, or do not plainly infringe some well defined principle of constitutional law.

Second. The tendency of courts is to give a liberal construction to the exercise of legislative powers for the protection of public health or public morals, and no one would be likely to deny that a restriction upon the privilege of the druggist to sell habit-forming drugs would be in the interest of both public health and morality.

Third. A court could hardly fail to recognize the fact that the druggist has no business to sell habit-forming narcotic drugs direct to the general public, and would be apt to tell him so, and moreover the druggist would have to admit that

to deprive him of the opportunity of selling such drugs except on prescription was, after all, a trivial matter, if his sales were for legitimate purposes. If his sales were not for legitimate purposes, he would have no right to appeal to the courts to protect him.

Fourth. A similar, or even greater, inequality exists in the liquor tax license law which passes unchallenged. For example, Druggist A., having paid a retail liquor dealer's tax, buys a barrel of alcoholic liquor, and may sell it (so far as the Federal law is concerned) to any one, either mixed with other things or without admixture.

Druggist B., who does not pay the retail liquor dealer's tax, also buys a barrel of alcoholic liquor, and by medicating it, is able to sell it without the payment of any tax at all. The tax is levied upon the *business of selling alcoholic liquors*, and in the two cases cited the one dealer sells as much as the other, the only difference being in the *manner* of sale.

The alleged inequality would be even less under the Harrison Bill, because the latter requires the physician who administers the drug to pay the same tax as the druggist, it only excuses him from the absurdity of demanding that his patient register as a dealer in narcotics before he receives the needed dose of medicine. In administering that dose the physician is not performing a commercial function in the ordinary sense, even though he makes a charge for his services and includes in that charge the cost of the medicine, just as the druggist who does not pay the liquor dealer's tax includes the price of the alcohol in the mixture which he compounds.

Another objection that has been made to exception "a" is the claim that to permit physicians to dispense these drugs to their patients without as close supervision as is exercised over their sale by the druggist will result in transferring the illegitimate traffic in habit-forming drugs from the dope-selling druggist to the dope dispensing physician.

To this objection it may be answered:

First. The exception in favor of physicians, dentists, and veterinarians is so worded as to make it exceedingly dangerous for them to dispense the drugs in other than a perfectly legitimate manner. They may dispense in the course of their professional practice only, and only when in actual personal attendance upon their patients.

Second. The last paragraph of Section 2 makes it unlawful for any person to make use of the order blank to obtain any of the named drugs "for any purpose other than the use, sale, or distribution thereof by him in the conduct of a lawful business in said articles, or in the legitimate practice of his profession." How long, under this provision, could the dope dispensing physician continue the business until his order blanks filed with the dealer would lead to his detection, and subject him to the \$2000 fine prescribed by the act, and how many physicians would be willing to assume such a hazard?

Third. If it were true that exception "a" would result in transferring the illegitimate traffic in narcotic drugs from the drug store to the office of the dispensing physician, it would furnish the strongest kind of reason why the drug trade should give the bill its hearty support and thus at once rid pharmacy of its most undesirable members, and make clear to the world the responsibility

of a certain class of doctors for the evils resulting from the improper use of narcotic drugs.

Fourth. There is nothing in this section, or in any other part of the bill, that would impose any impediment or restriction upon state legislation regulating or even prohibiting the sale within the state of habit-forming drugs. If the Federal law will provide the means of tracing these drugs in quantities to those who distribute them to consumers, the state law may safely be trusted to impose proper restrictions upon their distribution.

Still another objection which has been strenuously urged to exception "b" in Section 2, is that the druggist will have no means of learning what physicians, etc., are registered under the act, and may innocently make himself liable to the heavy penalties of the law by dispensing on the prescription of a physician who has not registered.

The phrase, "registered under this act" was first inserted in one of the earlier forms of the bill (the third prior to the present one) and was carried over into its two successors apparently for no other reason than that no one seems to have objected to it until after the pending measure had been started on its way through Congress.

In the writer's opinion, the phrase might be omitted without harm to the measure, though he does not share the alarm of those who see in it a great menace to the interests of the pharmacist.

In this connection the writer calls attention to the fact that Section 6 expressly exempts from all of the requirements of the act any and all preparations which do not contain more than two grains of opium, one-fourth grain of morphine, one-twelfth grain of heroin, or one grain of codeine, in one fluid or avoirdupois ounce, and consequently that a large majority of legitimate preparations and prescribed mixtures will not be covered by the act at all. The physician may dispense or prescribe, and the pharmacist may compound and sell such preparations without registering as dealers or without considering the act in any particular.

It is only when the amounts exceed the above stated maximum quantities that the act would apply.

If the measure should become a law, it certainly will not be long thereafter until lists of the physicians registered in any section will be available to the druggists of that locality, probably obtained and published by the drug journals or by local pharmaceutical associations, and until this has been done the druggist can always insure his own safety without any great loss of revenue by simply refusing to dispense upon the prescriptions of physicians not known to be on the register.

Whether the Harrison Bill shall become a law or not, it is fairly certain that the day is not far distant when it will nowhere be safe to dispense habit-forming drugs in such quantity or in such form that they might be used to satisfy a drug habit unless the pharmacist is well enough acquainted with the prescriber to feel assured that they are not intended to be so used.

In conclusion, the writer does not contend that the bill is perfect, or that it fully represents his own views of what such a bill ought to be, but he does regard it as a fair and reasonable compromise between the conflicting interests and

claims of those who will be affected by it, and he believes that if it becomes a law it will not only furnish the evidence necessary to enable the several states to more effectually enforce their own legislation upon the subject, but will also exercise a strongly deterrent influence upon those who are willing to take chances with the local laws, but will hesitate to try conclusions with the power of the United States Government.

J. H. BEAL.

STRIKING AN AVERAGE.

The hour of high-pitch enthusiasm is an exhilarating experience, but it is not a safe time for a man to take his own measure. Many a man, who, in a frenzy of patriotism, would bare his bosom to a hail of shot, or singe his hair at the mouth of the enemies' cannon, would not be worth three cents to the army. His feet would give out the first five miles of a forced march, and he would take his death of cold sleeping on the ground.

Many a man fails in business because he plunges in when red-hot with enthusiasm and then sizzles down until he is so cool he gives his customers a chill every time they come in. In entering any race, it is not safe for a man to figure himself in at top speed for the entire run. In estimating his assets on going into business, a man must not count himself in at what he feels he is worth at the high point of enthusiasm. He should be honest with himself, and, from what he has already done and failed to do in other things, strike an average. To be sure, he should raise that average if he can. But, if his normal ingenuity and push and efficiency are sixty, it is not safe to go into business or run for an office that will require a hundred.—*Popular Magazine*.

Scientific Section

Papers Presented at the Sixty-First Annual Convention

SUGGESTIONS REGARDING THE WORK OF THE SCIENTIFIC SECTION.

F. E. STEWART, PH. G., M. D., PHILADELPHIA.

We hear much in the pharmaceutical journals about the "profession" of pharmacy, but where is it? To be sure we have our pharmaceutical colleges and press, pharmacopœias, dispensaries and text-books, and hosts of pharmaceutical students, but it stops right there. Where is that body of professional men engaged in the practice of pharmacy we read about in the journals? Alas it does not exist. The modern pharmacy is a department store with a pharmaceutical annex.

Are we ever to have a profession of pharmacy, that is a body of men working in cooperation with the medical profession as experts in drugs? Are the students who worked for their diplomas ever to have an opportunity of using the knowledge they acquired at college in a practical way? That depends upon the medical profession. At the present time physicians do not prescribe drugs as formerly, and pharmacy, or the art of preparing drugs to meet the demands of the medical profession, languishes. Is that because drugs are useless in the treatment of the sick, or are there other reasons accounting for it?

A graduate of one of our eastern university medical schools recently called on me for advice regarding the use of a bacterial vaccine. He was also a graduate in pharmacy. Moreover, he was a very successful practitioner with a large practice. Speaking from thirty year's experience he said, "I am thankful for my pharmaceutical education. It gave me an insight to drug therapy. Not that I learned how to practice medicine at the college of pharmacy, but I learned about drugs, and how to prepare and dispense them. At the medical school I learned about diseases and how to diagnose them, but I did not learn what drugs to use in their treatment or how to use them. When the medical student graduates he does not know how to write a prescription. That is where the medical schools are weak. Now my pharmaceutical education came into play. I soon found out why the old worthies in the profession used such preparations as Basham's Mixture and Deshler's salve—preparations now considered worthless by some of the would-be medical authorities, so I commenced to use them in the same way, as recommended by the fathers of medicine, and with good results. That is why I have a large practice while many good men who perhaps know more than I do about some things have failed. They did not know how to use the *materia medica*."

There are thousands of physicians who do not know how to use the *materia medica*. About all they know about drug therapeutics is what they learn by reading the advertising pages of the medical journals and by listening to the

detail man. I have nothing but praise for the manufacturers who tell the truth in advertising and I compliment the detail man who conveys accurate knowledge to the physician for he is doing good work. But where does the professional pharmacist as an expert in drugs come in? Why does not the pharmacist call on the doctor and give him information concerning the advances in materia medica science? Why leave it all to the detail man? The doctor wants to know about drugs and if the druggist knows enough about them to give the doctor the information he craves, the druggist will always find a hearty welcome when he calls on the doctor.

What the doctor particularly wants to know about drugs is how to use them. I discarded from my correspondence files not long ago five thousand letters representing about four years' correspondence with doctors who wanted to know about drugs, especially in relation to serums, bacterins and tuberculins. Why did the doctors write to me on the subject? Why did they not ask their local druggists about them? You know the answer without my telling you. The local druggist as a rule is not an expert in drugs.

In answering the thousands of questions asked by physicians about drugs, I hardly ever express an opinion of my own. It is my habit to quote authority for all therapeutic statements. I give the doctors full information regarding the untoward effects, limitations, and comparative value of the newer materia medica taken from the reports of competent observers. That is what the doctor wants.

You say you are not competent to give such information. You would have to become competent if you took a position on the detail force of a manufacturing house. Why not read up?

Read up on the subject of immunity and its artificial production for the prevention and cure of disease and learn the difference between serums and bacterial vaccines, and how both are used, then inform your doctors about them.

Read up on drug standarization, then put in a line of standardized products and go and tell your doctor about it. Read up on drug preservation, then place your biologicals in cold storage and tell your doctors why you are doing so. The president of the state board of health in one of the eastern states gave warning to the pharmacists of his state to the effect that unless druggists carried their biological stock in refrigerators, the board of health would make preparations to carry its own stock.

After delivering my lectures on bacterins, serum, and smallpox vaccine two years ago I told the students to stock up with these products when they went into practice and bought their own stores, then go and tell the doctors about them. About a year afterward I met one of the graduates who had recently purchased a store of his own. Said he, "Tell the class for me that the plan is a good one. I tried it and my total sales increased one-third in a month in consequence."

But don't stop with the doctors. Tell their patients what you are doing. I called on a druggist in Scotland to pay my compliments to one of the fraternity some time ago. He was doing the largest business in his city. "How did you get such a fine business," I asked. "I will tell you," he replied. "I have been in the drug business fourteen years, seven in America and seven here in this store. When I purchased the store I informed the doctors and the leading people in the neighborhood that, as a professional pharmacist and expert in

drugs, I would personally guarantee that the medicines dispensed in prescriptions and sold over my counter conform to recognized standards. I also informed them that I would charge accordingly, for standardized medicines cost more than other medicines; and if they wanted cheap drugs not to come to my store for them. I kept hammering away until I educated physicians and their patients to discriminate in favor of standardized products. Standardization is the secret of my success. The future of pharmacy depends upon drug standardization."

Read up on the different preparations of the pharmacopœia and tell the doctors and the people about them. Physicians would prescribe more ointments if you would show them the difference between carefully prepared ointments and those made by careless manipulation. Enlighten people about the difference between properly prepared U. S. P. ointment of rose water and the miscellaneous brands of commercial cold creams.

The time at my disposal will not permit me to tell all of the things you can tell the physicians and the people about the preparations of the Pharmacopœia. Be sure and tell them how the Pharmacopœia itself is prepared so they may realize that it is the product of the concentrated brain work of a committee of high class drug experts representing the entire medical and pharmaceutical professions of the United States.

Then come here to this section and relate your experience. Give us papers with the information written in simple language so the busy physician can readily comprehend it. Get the editor to furnish you some reprints of your paper and send them to the physicians in your neighborhood. If you continue to do that kind of work, giving the doctors the kind of information they want, you will be surprised to see how your business will grow.

Now if a number of you will undertake this kind of work the JOURNAL of the A. Ph. A. will contain many pages of fresh information concerning the materia medica, new and old, and it will not be long before the doctors will commence to subscribe for the JOURNAL. I can conceive of nothing that will do more to popularize the materia medica and decrease therapeutic nihilism than this.

I would therefore move that the chairman appoint a committee of three to formulate a set of queries along the lines of the above suggestions, the list to be published in the JOURNAL sufficiently in advance of the next annual meeting to permit you to study the list to do some original work, and to contribute to the section such information concerning the materia medica of a character suitable for the physician to use as a guide in prescribing. If you will do this I am sure that you will forgive me for reading such a long paper.

AN IMPROVED FORM OF KYMOGRAPH.

PAUL S. PITTENGER, PHAR. D.

The ever increasing number of routine samples sent to the laboratory for physiologic tests, together with the desire to economize space, has induced me to increase the efficiency of the various apparatus employed sufficiently to enable us to handle comparatively large amounts of routine work without interfering markedly with our experimental or research work.

Among the various methods employed for physiologic standardization, blood pressure tests consume comparatively the greatest amount of time. This is especially the case with the blood pressure method for ergot, as it is necessary to check the results on two or three dogs, and, due to accumulative action, it is also necessary to allow from one to one and one-half hours to elapse between injections. With the usual method of using one manometer and kymograph it is possible to work with only one animal at a time, and it therefore requires the greater part of two days to assay one sample of ergot in duplicate. The frequency with which we receive at one time four or five samples of ergot led to my devising the following apparatus with which it is possible for one man to run blood pressure tests on four animals at the same time, and record all the tracings on one kymograph without their interfering with each other. This enables one operator to assay at one time with one kymograph two samples of ergot in duplicate, or, he can assay at the same time one sample of ergot in duplicate and one sample of adrenal extract.

The following cut shows the arrangement of the apparatus:

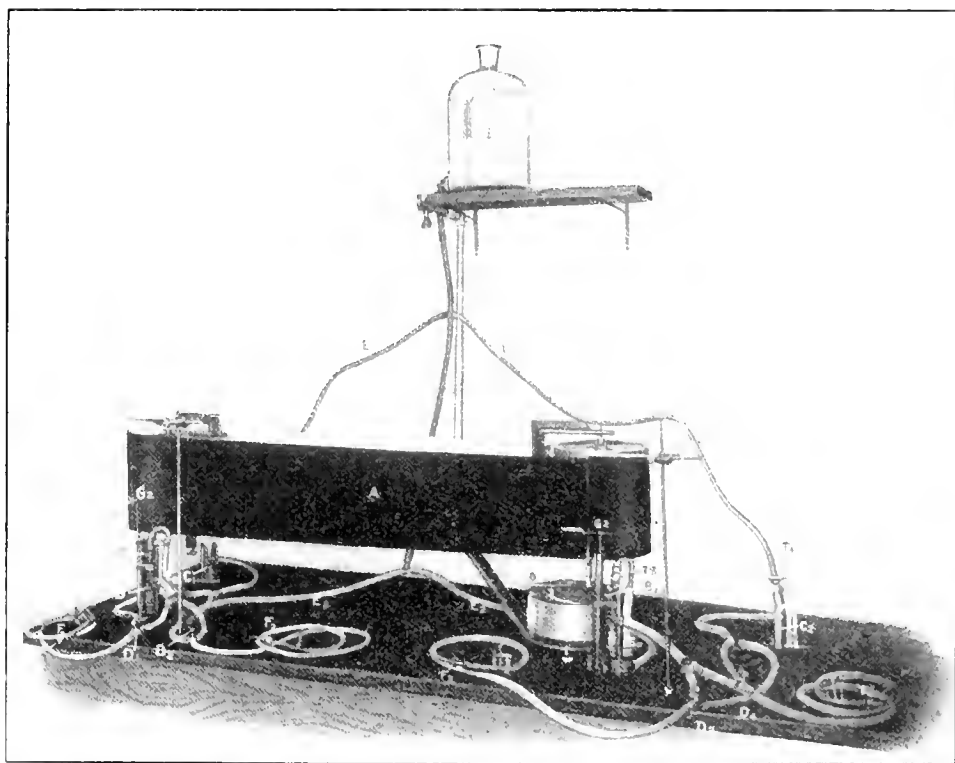


FIGURE 1.—Kymograph arranged for making blood pressure tests on four animals at one time. A.—Long paper Kymograph; B1 and 2, Manometers, with writing points; G1 and 2, writing points; C1 and 2, Dummy manometers, without writing points; D1, 2, 3, and 4, Three-way stopcocks; E1.—Tubes used for securing pressure in manometers B1 and 2, from pressure bottle; E2.—Tubes used for securing pressure in dummy manometers C1 and 2 from pressure bottle; F1, 2, 3, and 4,—Canulas; H1, 2, 3, and 4,—Connecting tubes; T1, 2, 3, and 4,—Stopcocks.

Description of Method.—First completely anesthetize the animal. Any of the volatile anesthetics, such as ether or chloroform, may be employed, but, since it

is of great importance that the blood-pressure should not fluctuate from the action of the anesthetic, it is better to employ one of the following methods for this purpose:

1. Inject subcutaneously 0.01 gm. of morphine sulphate for each kilo of body weight, and supplement by the use of such a quantity of ether as may be necessary to prevent the pain of the operation. After connecting the artery with the manometer the animal is allowed to come from under the influence of the ether. No experiments should be begun until at least ten minutes have intervened after the withdrawal of the ether.

2. Inject subcutaneously 0.01 gm. of morphine sulphate per kilo body weight of animal, and 45 to 60 minutes later give by mouth 1.5 to 2 gm. of acetone chloroform (1.5 gm. for animals weighing 6 to 7 kilos, 2 gm. for those weighing 10 to 12 kilos, and intermediate weights accordingly). The acetone chloroform is prepared for administration by shaking it with 4 cc. of alcohol until dissolved and then adding 4 cc. of water and again shaking.

The latter method is especially valuable for this work, as it is easily carried out, and under its influence the blood-pressure and heart action remain practically constant for hours. I find, however, in many cases, that the animal does not react in such a way as to give concordant results immediately after the administration of this anesthetic, and therefore advise that an interval of two hours be allowed to elapse after the administration of the acetone-chloroform so that the effects of the anesthetic may partially pass off.

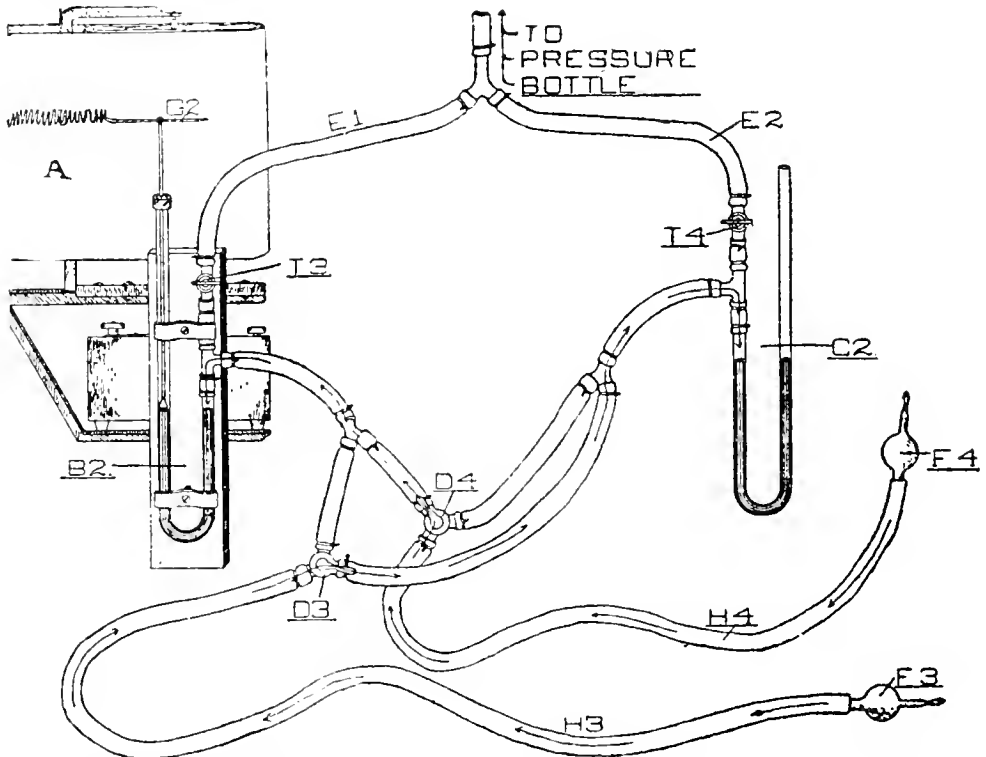


FIGURE 2.—A graphic illustration of the arrangement of one-half of the apparatus. The letters and figures used in this illustration correspond to those used in Figure 1.

Each of the four canulas (Fl, 2, 3, and 4) is then tied into the carotid artery of a dog. Pressure is obtained within the various tubes from the pressure bottle (P) by opening the cocks, (T1, 2, 3, and 4) (T2 invisible). It will be noted from Figure 1 that each connecting tube (H1, 2, 3, and 4) terminates in a three-way stopcock which enables the operator to connect it with either a manometer which writes on the smoked drum, or with a "dummy" manometer.

To assay two samples of ergot it is merely necessary to use two dogs on one end of the kymograph for one sample and two on the other end for the other sample. The three-way stopcocks are arranged in such a manner that one dog on each end records its pulsations upon the revolving drum, while the other pulsates against a "dummy" manometer. Inject the proper dose of fluid extract of ergot into the dog which is recording its blood pressure on the right-hand side of the kymograph; allow the drum to revolve five, ten and fifteen minutes after the injection. Then by merely reversing the stopcocks (D3 and 4) the dogs can be interchanged, or in other words, the dog which was recording its blood pressure on the smoked drum will pulsate against the mercury in the "dummy" manometer, and the one which was previously pulsating against the "dummy" will record its normal blood pressure upon the smoked drum. After taking a normal tracing of several inches in length, stop the drum; then check the former results by injecting this dog with the same preparation given to dog No. 1; again, take tracing five, ten and fifteen minutes after the injection. Repeat operation by injecting, in a similar manner, the other sample into the dogs on the left-hand side of the drum. This will consume about one hour and fifteen minutes. It is then necessary to wait only about fifteen minutes or until the one and a half hours have elapsed since the first injection was given when the entire procedure can be repeated. This is continued until each dog has received three or four injections. The charts are then measured and the average rise of pressure produced by each preparation is taken as its figure of potency.

To assay one sample of ergot in duplicate and one sample of adrenal extract it is necessary to employ only three animals, two on the one end for the ergot and one on the other end for the adrenal extract.

PHYSIOLOGY LABORATORY OF H. K. MULFORD COMPANY, July, 28, 1913.

BETHABARA.

OTTO RAUBENHEIMER, PH. G., BROOKLYN, N. Y.

A few years ago at a meeting of a State Pharmaceutical Association, a highly scientific paper was followed by a rather ordinary one on "Fishing Tackle." What a contrast! From the sublime to the ridiculous! Perhaps I will be also criticized by reading before the Scientific Section of our great A. Ph. A., a paper on "Bethabara," which is the name of the wood used in the manufacture of fishing rods.

The vegetable kingdom abounds in dye stuffs which have been made use of from the oldest times. The ancients well knew how to prepare, how to extract,

and how to treat the raw material in order to bring out the most beautiful colors. Dyeing belongs to the many arts which the Egyptians, Lydians, Phœnicians, and the Jews have greatly developed. They knew how to fix certain dyes, especially on cloth, by means of mordants. Color reactions, indicators and test papers have also been observed and utilized in ancient times. As an illustration of this kind I might mention that paper saturated with extract of nutgall was then used to detect the admixture of the cheap iron vitriol with the more expensive blue vitriol. Dominique Duclos (1623-1684), the physician-chemist of Paris, introduced reagents of nutgall, iron-vitriol, litmus, decoction of lillies and of Brazil-wood. Michel Eugène Chevreul (1786-1889), the Nestor of the French chemists, as director of the world renowned Gobelines tapestry works in Paris, greatly improved the chemistry of dyeing, as well as that of dye stuffs. In 1811 he prepared hæmatoxylin from logwood and brazilin from Brazil or red-wood. Both of these chemicals have since then come into use as indicators, especially in the volumetric analysis of alkaloidal solutions.

A few weeks ago Dr. Einford Throne, a native of Nashville, and now a well-known dermatologist of Brooklyn, made himself a fishing rod from Bethabara wood. This wood is highly valued on account of being exceedingly tough, hard and close grained. Dr. Throne discovered that after working with this wood and washing his hands with soap and water a beautiful red color was developed, evidently from the alkali in the soap. He brought me some of the shavings and asked me to further investigate the coloring matter, which is the excuse for my present paper.

In order to be absolutely sure of the proper botanical origin of this wood, the author sent samples to Dr. C. D. Mell, in charge of Wood Structure Investigations, Forest Service, United States Department of Agriculture, Washington, who was kind enough to examine some and pronounce it a true sample of Bethabara, which compares exactly with the sample in the Forest Service wood collection. Dr. Mell was also good enough to give me the following information:

"Bethabara is a name which was copyrighted by William Shipley, of Philadelphia, and applied to a wood which he imported into this country from British Guiana, South America. The tree producing this wood is commonly known in British Guiana and also in the English market as wicaba, washiba, or bow-wood, and its generic name is *Tecoma*. I have been unable to determine which one of the many species of *Tecoma* yields the wood known as 'bethabara,' but it is probable that it is produced by several species of this group. Even the wood of an unrelated tree known as tonquin or tonga (*Dipterix odorata*), also of British Guiana, has been sold in the American markets as 'bethabara' for making fishing rods. The beans of the latter have a medicinal value, but so far as is now known the wood of these two trees does not yield commercial dye. The pores or vessels of these woods are filled with yellowish-green tyloses, which may perhaps by proper treatment yield a dye.

"The true bethabara (*Tecoma* sp.) grows to a large size, but is a rare tree and little known. The wood is of an olive-green color, is exceedingly tough, hard, and close grained, and is the best known wood for bows. The average height of the tree is about 120 feet and it can be had to square thirty inches free of sap."

Dr. Mell was also good enough to supply me with authentic samples of *Tecoma* and of *Dipterix odorata*, which are herewith submitted as specimens.

Extracts of Bethabara.—Thinking that Bethabara might be similar to Brazil-wood, I first employed the U. S. P. Process for making Brazil-wood Test Solution, but I soon discovered that water does *not* extract the desired indicator. The shavings of Bethabara wood were extracted with the following different solvents, making a uniform 5 percent solution:

- | | |
|--------------------------------|-----------------|
| 1. Cold maceration with water. | 4. 25% Alcohol. |
| 2. Infusion. | 5. 50% Alcohol. |
| 3. Decoction. | 6. 95% Alcohol. |

The cold aqueous extract has a yellowish color, while that prepared by heat has a purplish or reddish-brown color, according to the heat employed.

The alcoholic tinctures increase in color to a reddish-brown with the increase of alcohol.

Experiments With the Extracts as Indictors. Numerous experiments were made and it was soon discovered that the aqueous extracts had very little or no value as an indicator. The tincture prepared with 25 or 50 percent alcohol were somewhat better, but by no means ideal. However, the tincture prepared with 95 percent alcohol proved an indicator *par excellence*. It is the equal of phenolphthalein test solution and is much sharper than litmus-paper.

The Indicator-Tecomin (?). Several attempts have been made by the author to isolate this indicator. These experiments, owing to the limited supply of the wood, had to be somewhat restricted.

An alcoholic tincture was precipitated with water and then set aside. A yellowish substance precipitated, the supernatant liquid retaining its reddish-brown color. By repeated washings with water and subsequent drying, a yellow powder was obtained as shown by the sample. This powder is insoluble in water, but is freely soluble in alcohol.

Another method pursued consisted in first extracting the Bethabara shavings with boiling water repeatedly, until the infusion is almost without color. Then the wood is macerated with water containing one percent of ammonia water, which forms a blood-red solution, which is concentrated by evaporation, by which process the excess of ammonia is also driven off. The solution is then carefully neutralized with diluted sulphuric acid, which combines with the ammonia and liberates the yellow substance. This floats on top and can be obtained by filtration, washing and drying.

According to our present system of nomenclature the name "Tecomin" might be suitable for this indicator, being derived from species of the *Tecoma* wood. The author is in hopes that further experiments by himself and others will throw more light on this subject.

Conclusions. Bethabara contains a sensitive indicator which turns pink with alkalies and yellowish with acids. This indicator is especially sensitive to ammonia.

Pure alcohol is its best solvent.

This principle which is a yellow powder, can be obtained by precipitating the alcoholic tincture with water, washing the precipitate with water and then drying

ESTIMATION OF OIL OF PEPPERMINT IN SPIRIT OF
PEPPERMINT.

CHARLES H. LAWALL, PH. M., AND LEROY FORMAN.

The estimation of oil of peppermint in Spirit of Peppermint has usually been carried out by means of the precipitation method as used for Spirit of Lemon, using a Babcock milk flask with a graduated neck. The varying results, however, which have been obtained have caused criticism of the method as inaccurate, and upon investigation of the subject we have found that the fault lies not with the principle of the method but with the manner in which it is carried out. The use of a Babcock milk flask, holding as it does only a little more than 25 cc. of liquid, does not permit of sufficient dilution with water in preparations containing a high amount of alcohol and a low amount of oil, for peppermint oil is distinctly more soluble in diluted alcohol menstrua than is lemon oil, to which the method is particularly applicable in its form adopted in the U. S. Dept. of Agriculture Bulletin No. 107.

Experiments have shown us that where the alcoholic strength is reduced below 25 percent, the amount of oil dissolved is negligible in amount, but the use of so small a proportion of the Spirit in a Babcock milk bottle makes the separated volume of oil so small in amount as to seriously interfere with the sensitiveness of the method to within one or two percent.

A larger form of flask was designed by us which gives very good results and which consists of a conical flask of 100 cc. capacity terminating in a long narrow tubular neck not over 12.5 mm. in diameter and graduated up to 10 cc. in one-tenths.

The introduction into such a flask of 25 cc. of Spirit of Peppermint, followed by the addition of 5 cc. of hydrochloric acid and sufficient warm water to fill the flask and bring the oil up into the neck, suffices for the determination within one-tenth of one percent upon all strengths from 10 percent down to 1 percent, all in strong alcohol. The addition of salt which was thought would be of value in hastening the separation of the oil is not permissible, for in the salting out by such a process some of the alcohol is separated with the oil and the results run high to the extent of several percent in the several experiments tried.

With such a flask, gravitation alone suffices to bring the oil up into the neck of the flask within several hours, occasionally rotating to lessen the tendency of the globules to adhere along the sides of the flask and neck. If the flask were constructed, as could easily be done, so as to permit of whirling in a centrifuge, the estimation could be made accurately and satisfactorily within a very few minutes.

Such flasks are in use by us for the determination of all of the spirits of oils lighter than water, excepting almond, and the additional advantage is gained that after the volume of the separated oil has been accurately observed and noted, the oil itself may be easily and completely removed by means of dry filter paper or blotting paper inserted in rolled strips, without the removal of any of the hydro-alcoholic liquid beneath. The contents of the flask after the

removal of the oil may be transferred to a distilling flask, the hydrochloric acid neutralized and the alcoholic distillate from 25 cc. of the original spirit obtained in better condition, as regards freedom from oil, than usually results by following the official method of diluting the original spirit and filtering through magnesium carbonate, which always occasions a slight loss by evaporation which cannot take place to the same extent under the procedure given above.

PHOSPHORIC ANHYDRIDE CONTENT OF SIMPLE AND COMPOUND SYRUP OF HYPOPHOSPHITES.

H. E. BARNARD AND W. D. MCABEE.

The attention of this department was recently directed to the great difficulty of holding all the ingredients of Syrup of Hypophosphites, both simple and compound, in solution. The solution of the various salts in water is easily accomplished but the addition of the sugar precipitates a part and if the product is immediately strained, this precipitate is removed and the resulting solution is lower in strength than was originally intended. Upon inquiry, we found that several manufacturers had noted this fact and were somewhat in doubt as to the actual content of finished product, but had assumed the loss to be immaterial.

The first difficulty encountered in our investigation was the adoption or formation of a suitable method for the determination of the amount of phosphorus present. It was at once apparent that the great amount of organic matter must be destroyed by some means that would not interfere later in the phosphate precipitation and for this reason the simple process of ashing was not applicable because all hypophosphites decompose at low heat into pyrophosphates with the evolution of hydrogen phosphide. The reaction is quite variable and the remaining phosphorus cannot be used as an index of the amount originally present.

A search of the literature revealed the fact that while no method was recommended, the National Dispensatory states that the one of H. A. D. Jewett is "seemingly" accurate for the estimation of phosphorus in calcium hypophosphite. Briefly this method consists in the liberation and oxidation of the hypophosphorus acid to phosphoric acid by means of bromine and the determination of the phosphoric anhydride in this condition. Any phosphites that might be present as impurities are removed by precipitation with lead acetate. We experimented with this method as outlined and obtained very satisfactory results on calcium, sodium and potassium hypophosphites alone and in the presence of a large amount of sugar. In the course of our experiments we found that the lead acetate gave but a slight precipitate even in a concentrated solution of a hypophosphite and the percent of phosphites in the dilute syrup could be neglected. We also, for convenience, substituted concentrated nitric acid for the bromine and evolved the following method in detail:

Determine the specific gravity with a Westphal balance or pycnometer. Weigh accurately two grams of the sample into a one hundred cubic centimeter beaker, add ten cubic centimeters concentrated nitric acid and cautiously bring to boiling.

A violent reaction occurs at this point and care must be taken to prevent loss through bumping and boiling. When this violent reaction has ceased, add gradually forty cubic centimeters concentrated nitric acid and boil for five minutes. Nearly neutralize with ammonia, or, if not sufficient nitric acid remains to form the ammonium nitrate necessary for the molybdate precipitation, make alkaline with ammonia and again make acid with nitric acid. Ammonium molybdate is then added, the precipitate dissolved in ammonia and the phosphorus precipitated with magnesium in the usual way.

Having found a satisfactory method, the next step was to procure samples and we were somewhat surprised to learn that the two pharmacopœial preparations comprised but a small part of the hypophosphite syrups on the market. The majority found by our inspectors were made from special formulas and as the analysis of such samples would not aid materially in the determination of the point in question, we were compelled to investigate fewer samples than we should have wished to do. While only six of the samples examined were labelled so that they were presumed to be U. S. P. strength, two others, made from formulas that called for approximately the U. S. P. quantity, are comparable because of their nearly equivalent concentration. One sample examined claimed to be only ten percent of the pharmacopœial strength and three others contained no label statement and were so qualified as to prevent their being classed U. S. P. strength. The following table gives in detail the results of the analysis together with the label statement.

No.	Label.	% U. S. P. Strength.	
		Label.	Found
1	Syrup Hypophosphites	100.	12.74
2	Comp. Syrup Hypophosphites.....	100.	15.72
3	Syrup Hypophosphites Comp. with Quinine.....	100.	28.89
4	Syrup Hypophosphites Comp., Churchill's Formula.....	111.	107.44
5	Comp. Syrup Hypophosphites.....	100.	43.04
6	Comp. Syrup Hypophosphites.....	100.	9.87
7	Syrup Hypophosphites	100.	96.59
8	Syrup Seven Hypophosphites.....	101.	91.59
9	Comp. Syrup Hypophosphites.....	10.	11.68
10	Syrup Hypophosphites, Lime and Soda.....	....	42.38
11	Syrup Hypophosphites, Hematic.....	....	23.49
12	Nutritive Hypophosphites .....	....	17.00

In this table the percent U. S. P. strength as indicated by the label was assumed to be one hundred when the formula was not given and the label was not qualified. When the formula was stated the U. S. P. strength was calculated from it directly, and where no formula was given and the label was qualified in some manner, this column has been left blank.

As may be readily seen from a glance at this table, only one sample, number four, contains the amount of phosphoric anhydride required by the Pharmacopœia. This sample was made from Churchill's formula which differs from that of the Pharmacopœia by increasing the quantity of the more soluble sodium salt and decreasing the less soluble calcium hypophosphite. While the excessive strength of this sample may be explained in this manner, the fact remains that if a correction is made for the two percent impurities in the ingredients, as allowed by the Pharmacopœia, sample number seven is very nearly legal and was made strictly according to the U. S. P. formula. The other samples clearly

demonstrate that the hypophosphite preparations now on the market are woefully below standard and more care must be used in their manufacture than has been done heretofore.

INFLUENCE OF SIZE AND SHAPE OF BOTTLES UPON THE ASSAY OF PEPSIN.

HOWARD T. GRABER, DETROIT, MICH.

In a previous paper, entitled, "Some Observations upon the Assay of Digestive Ferments," appearing in the *Journal of Engineering and Industrial Chemistry*, (Vol. 3—No. 12—December, 1911), I gave a resume of tests applied by me and also called attention to some of the peculiarities of these delicate enzymes shown in their standardization.

Under the subject of Pepsin, I was the first to call the attention of chemists to the influence of the age of the egg upon the apparent digestive strength of a pepsin when using coagulated egg albumen as the proteid to be digested. I showed that eggs from 5 to 10 days of age gave a maximum digestive strength to a sample of pepsin. I also called attention to the important part played by the strength of acid used for digestion and showed that the pepsin dissolved in an acid solution of more or less than 0.3%, by weight, absolute hydrochloric, would not digest as much proteid as when dissolved in a menstruum of exactly this official strength (0.3%).

Another factor, overlooked by chemists in the past and very important from the standpoint of accuracy and uniformity of results in standardization by various chemists, is the size and shape of the bottle used in the digestion experiments. The United States Pharmacopœia states, in reference to the digestion bottle used with pepsin standardization, to digest in a wide-mouth bottle of 100 cc. capacity; but the question arises, do you get the same relative amount of digestion in a short round bottle of 100 cc. capacity that you do in a taller square bottle of the same volume? From the results of my experiments, my answer is "No"; different bottles give different results. This is illustrated by the following experiments:

Pepsin Sample No.	Style of Bottle.	Strength Tested for	Residue
	(No. 1)		
Standard 1:3000	6 oz. French square wide mouth, capacity 175 cubic centimeters. 5 $\frac{1}{4}$ " Tall.	1:3000	1 cc.
	(No. 2)		
1:3000	4 oz. French square wide mouth, capacity 120 cc. 4 $\frac{3}{4}$ " Tall.	1:3000	1 cc.
	(No. 3)		
1:3000	3 oz. French square wide mouth, capacity 90 cc. 4 $\frac{1}{2}$ " Tall.	1:3000	1 cc.
	(No. 4)		
1:3000	3 oz. Round, Prescription wide mouth, 100 cc. capacity. 4" Tall.	1:3000	1 $\frac{1}{4}$ cc.
1:3000	4" Tall.		
		1:2750	1 cc.

In the above experiments the eggs were but five days old and were too fresh.

as shown by the residue remaining, 1 cubic centimeter. The experiment was repeated with eggs eight days old, with the following results:

Pepsin. Standard	Style of Bottle.	Strength Tested.	Residue
1:3000	No. 1	1:3000	0.5 cc.
1:3000	No. 2	1:3000	0.45 cc.
1:3000	No. 3	1:3000	0.5 cc.
1:3000	No. 4	{ 1:3000	0.8 cc.
		{ 1:2750	0.5 cc.

This was shown again in another test on eggs eight days old, as follows:

Pepsin. Standard	Style of Bottle.	Strength Tested.	Residue
1:3000	No. 1	1:3000	0.5 cc.
1:3000	No. 2	1:3000	0.5 cc.
1:3000	No. 3	1:3000	0.5 cc.
1:3000	No. 4	{ 1:3000	0.8 cc.
		{ 1:2750	0.5 cc.

Conclusions.—The experiments cited show that the style of bottle exerts a big influence upon the amount of proteid digested. Bottles No. 1, 2 and 3 are of the same style, i. e., wide mouth, French square of 6 oz., 4 oz. and 3 oz. capacity, and the results show that the digestion in these bottles seems to be the same in spite of the difference in relative capacity. With bottle No. 4, however, a strength of 250 units less is shown, and this bottle is a short, round, wide-mouth prescription bottle of 3 oz. capacity. My explanation is that in this style of bottle the contents do not receive the same agitation, due to the bottle being shorter in length and larger in diameter, even though its relative internal capacity is more than bottle No. 3; thus proving that the digestion conducted in a square long bottle leaves less residue than a short round bottle of larger internal volume.

Another point that I wish to bring up is that in the use of the 6 oz. French square, it is possible to add first the 10 grams of egg albumen, then all the acid, and finally the requisite amount of pepsin solution, and after securely inserting the stopper, to pound it upon a pad and completely disintegrate the albumen. With all the other sizes of bottles the directions of the Pharmacopœia to disintegrate the albumen first with a small quantity of the acid and a rubber-tipped glass rod and gradually wash rod with balance of acid, must be followed. As this might lead to an error, I recommend the use of the larger bottle and do not favor the introduction of any foreign substance at all, and the results show that the relative digestion is not changed by the size of this style of bottle.

In concluding, I wish to state that a personal equation as to agitation could not enter in my experiments, since the bottles were all tightly clamped into a revolving drum, which was immersed in a water bath, and when the drum was rotated, each and every bottle received the same amount of agitation and at the same time.

THE EXAMINATION OF MEDICINAL PREPARATIONS.

E. A. RUDDIMAN, PH. D., M. D., NASHVILLE, TENN.

The examination of medicinal preparations involves a rather wide range of knowledge. We should have a good working knowledge of inorganic and organic chemistry: of qualitative and quantitative analysis: of therapeutics, in order to know what to look for: of pharmacy, so that we can tell something about what simple preparations are likely to go into the complex mixture.

The agents used in medicine are almost numberless. I presume practically all plants have been used some time to relieve human ailments. New synthetic agents are being produced daily. There is no hope of ever knowing all about the analysis of these.

One of the first things to do in commencing such an examination is to find out for what the preparation is to be used. This may give us some idea as to the agents liable to be found, but when the preparation is claimed to be good for the whole category of diseases, probably it hasn't very much of any thing in it.

A trained nose and an expert taste are very convenient things to have and the evidence derived from these is some times more reliable than that obtained by chemical tests and often the only evidence obtainable.

Organic matter of some kind is generally present in the preparations to be examined and must be destroyed before making the analysis of the inorganic constituents. One of several well known methods may be used. But before destroying the organic matter, I generally apply Reinsch's test which is made by acidifying the mixture with hydrochloric acid, putting in a bright copper gauze and heating to boiling. If the test is negative, I generally presume that the metals depositing on copper are absent unless for some reason I think that they may be present in minute traces. The common metals which are deposited on copper are generally those which are most readily volatilized by destroying organic matter by dry heat.

While the estimation of inorganic constituents is complicated by the presence of organic matter, it is in the detection and estimation of organic compounds, like alkaloids, glucosides, neutral principles, and synthetic chemicals where we find the greatest difficulty. It is needless to say that there are many vegetable drugs that can not be identified because there are no definite principles in them or no characteristic tests for them.

In separating organic principles for identification the "shaking out" method is the one generally used, that is, shaking the preparation with an immiscible solvent. This method is very satisfactory sometimes and at other times is just the opposite. The trouble of course arises in making an emulsion between the preparation and the solvent. The presence of sugar and glycerin retard the separation of the solvent. If such drugs as senega, quillaja, sarsaparilla—drugs containing saponin-like principles—are present, it is almost impossible to avoid making an emulsion. Sometimes this tendency may be lessened by choos-

ing some other solvent. The emulsion may separate if allowed to stand for a time or breaks more easily by other means after the standing. Subjecting the emulsion to centrifugal action may break it up. The addition of a little solvent other than that originally used, such as alcohol or petroleum ether is often quite effective. The tendency to emulsify seems to decrease with the increase of the proportion of the solvent over the preparation. If the volume of the solvent be two or three times that of the preparation, there is but little danger. The addition of water to a syrup seems to cause emulsification more readily. Sometimes all these means fail and it becomes necessary to evaporate the solvent and start over. Often in cases where most of the emulsion is broken up, a little will yield only to evaporation.

In case of syrups and similar preparations, I have tried to avoid the trouble by drying up the preparation with filter paper, sand, kieselguhr, and extracting with strong alcohol, but this is slow and tedious and not very satisfactory.

Tablets frequently contain starch. The best way to extract them is to powder them, putting from 0.5 to 1.0 gram of the powder into a separatory funnel with 1 to 2 cc. of water and a few drops of ammonia water and then 15 to 30 cc. of the solvent. This can be shaken vigorously without emulsifying. Chloroform is the best solvent if it will dissolve the matter, because it is heavier than the water and powder and can be drawn off without disturbing the water or powder. The addition of much more water than that given above will be likely to cause an emulsion.

In choosing the immiscible solvent to be used in the shaking out process, we must be guided to some extent by what we expect to find. I do not think it is necessary or even advisable to use all the common solvents successively for in so doing some of the principles are apt to be lost. Of all of the solvents I prefer benzol because it is a poor solvent for alkaloidal salts and a fairly universal one for the free alkaloids, although not the best one for special cases. It will take out enough of any of the common alkaloids, except morphine, to get a test with the general alkaloidal reagents.

The method which I generally use for qualitative work is to evaporate off the alcohol, if much is present in the preparation, and make it acid with dilute sulphuric acid. Sulphuric acid is better than hydrochloric because the sulphates of the alkaloids are less soluble in immiscible solvents than the hydrochlorides, particularly in chloroform. For example, quinine hydrochloride is soluble in 0.8 parts chloroform. This acid mixture is extracted repeatedly with benzol, and in a few cases preceded or followed by ether or chloroform. The aqueous acid mixture is then made alkaline with ammonia and extracted repeatedly with benzol and later with chloroform, the chloroform being for the purpose of dissolving morphine. After having determined the principles present, the solvents best suited for their isolation and determination can be used.

The residue from the benzol washings of the aqueous acid mixture may contain caffeine, theobromine, narcotine, many glucosides, neutral principles, resins, oils, organic acids, synthetic compounds, etc. The glucosides and neutral principles are hard to separate, identify and estimate, and comparatively few have characteristic color reactions. The residues from the benzol washings of the aqueous alkaline mixture contain alkaloids and base principles. Fortunately

many alkaloids can be tested for in the presence of others but there are a few cases of interference. Brucine with strychnine, in the proportion in which they exist in *nux vomica*, lessens the delicacy of the strychnine test and if only a small amount of the mixed alkaloids be present, may entirely prevent it. If there is twice as much brucine as strychnine the test for strychnine will be negative. These can be sufficiently separated by converting the mixed salts in the free alkaloids and shaking with ether, strychnine being practically insoluble in ether, while brucine is quite soluble. A large amount of quinine with a small amount of strychnine, such as occurs in elixir of iron, quinine and strychnine prevents the getting of the strychnine test. Here again ether separates them. Quinine in large amounts prevents the tests for morphine. Antipyrin may prevent the quinine tests. Physostigmine and pilocarpine impair Vitalli's test for atropine but the mixture of these free alkaloids can be separated by carbon disulphide which dissolves atropine but not the other two. There are other combinations that cause trouble.

To separate alkaloids for quantitative determinations is generally tedious and often well nigh impossible. The presence of one alkaloid in solution frequently influences the solubility of others. Different combinations must be treated differently. Sometimes they can be separated by precipitants. Having a mixture of salts of cocaine and atropine, I converted them into sulphates and added a solution of platinum chloride to the solution of the sulphates. Platinum chloride does not precipitate atropine or the mydriatic alkaloids of the *solanaceæ*, but does most other alkaloids.

These examples are a few illustrations of the difficulties which beset the analyst when he comes to medicinal preparations, and these difficulties can be realized to some extent when we consider the great variety of forms of preparations, the many classes of agents used and the almost numberless individual constituents that may be found. Every preparation is a new problem, and in this lies the fascination.

THE MAN WHO DESERVES THE CHEER.

Never admire a man just because he has money. Any chump can get that, if he is mean enough to scrape it up and go without comfortable things to acquire it. But the man who thinks, strives, works, and sweats to grind out something that is of benefit to the whole race—that's the chap for whom to cheer! When I think of the telephone, the phonograph, and the electric light, I realize that all men are not born equal! Some get a bigger share of energy.
—*Robert Lloyd*.

Section on Pharmacopœias and Formularies

Papers Presented at the Sixty-First Annual Convention

REPORT OF THE COMMITTEE ON THE UNITED STATES PHARMACOPŒIA.

As is well known the present state of revision of the United States Pharmacopœia makes it unprofitable for the members of this committee to devote much time and attention to the old book which will be so soon replaced by the ninth revision. The majority of the members of this committee are on other important committees whose work will be completed with the publication of the Pharmacopœia and the National Formulary. After these works have come into use this committee as a whole will be in a position to begin collecting the data for which it was organized.

Early in the year the chairman suggested that he desired the members of this committee to report either to him or to the Association direct through the Section on Pharmacopœias and Formularies, such observations and suggestions concerning the U. S. P., as might be of value to the Committee of Revision. In response to this there are several papers, and some suggestions which follow in this report.

SOLUTION OF IRON AND AMMONIUM ACETATE.

This preparation when made according to the following formula is permanent, keeping for more than a year without change. The essential change is the increase of glycerin from 120 to 200 cc.

Tincture of Ferric Chloride.....	40 cc.
Diluted Acetic Acid.....	40 cc.
Solution of Ammonium Acetate.....	400 cc.
Aromatic Elixir.....	200 cc.
Glycerin	200 cc.
Water, a sufficient quantity to make.....	1000 cc.

—DUNNING.

SYRUP OF HYPOPHOSPHITES.

The sugar should be sufficient to saturate the solution, or 810 gm. This produces a syrup which is entirely permanent and, contrary to the opinion of others, in my experience the use of enough sugar for saturation does not salt out the hypophosphite salts.—DUNNING.

CALCIUM HYPOPHOSPHITE—SODIUM HYPOPHOSPHITE.

Copper sulphate T. S. is directed to be added and upon gentle heating a precipitate is supposed to form. This does not happen, except on long boiling, unless previously acidified.—DUNNING.

BORIC ACID.

The accuracy of the statement that the addition of hydrochloric acid decreases its solubility in water is questioned.—DUNNING.

SOLUTION OF SODIUM PHOSPHATE, COMPOUND.

It is suggested that 200 gm. of citric acid be used and that the solution of sodium phosphate be produced by heating. This greatly facilitates solution and in no way injures the preparation.—DUNNING.

POTASSIUM AND SODIUM TARTRATE.

A flame test for the identification would seem to be desirable.—DUNNING.

MILK SUGAR.

The following is proposed as a test for cane sugar: A test solution is prepared by dissolving 1 gm. of resorcinol in 5 cc. of hydrochloric acid in 100 cc. of 80 percent alcohol. A few drops of this test solution added to a few grains of milk sugar in a porcelain dish and cautiously evaporated, the fluid being run away from the milk sugar on the side of the dish. In the presence of cane sugar a bright vermilion flash of red appears, while milk sugar gives a dull red, appearing very slowly after long heating. With a little practice, this test can be used for estimating mere traces of sugar in milk sugar. This test which is a modification of the test used for detecting hydrochloric acid in animal secretions, has given good results in my hands wherein the sulphuric acid has proved useless.—DUNNING.

SYRUP OF WILD CHERRY.

The 1890 formula is recommended as producing a more desirable color and better keeping qualities than the formula of 1900.—DUNNING.

TINCTURE OF CARDAMOM, COMPOUND.

The substitution of the 1900 formula for this preparation in preference to the 1890 is believed to be a great mistake. The process of percolation should be used and the glycerin should be added afterwards. A preparation so prepared is of better physical appearance and possessed of better keeping qualities than by any other method tried. The 1900 formula gives a preparation which filters clear with great difficulty and has a color which is not the bright, attractive red that it should have.—DUNNING.

TINCTURE OF LAVENDER, COMPOUND.

The statements made with reference to the compound tincture of cardamom, apply to this tincture but in a lesser degree.—DUNNING.

The chairman has endeavored to interest the Food and Drug chemists in the U. S. P. and N. F. and has received some valuable suggestions but the number of responses has been too limited up to this time to warrant drawing definite conclusions. The replies so far received seem to favor a sharper line of demarcation between the U. S. P. and N. F. and more standards particularly where the "Purity Rubric" is given. There is also a demand that the results of modern research into the realms of adulteration and standardization be made more readily available than is at present possible with the wording of the Food and Drugs Law, and the decennial revisions of the Pharmacopœia.

In many quarters an authorized standard work representing the consensus of opinion of the medical profession on the medical properties and therapeutic value of drugs would be welcomed. This demand has already been met to a

certain extent, by the New and Non-official Remedies of the Council on Pharmacy and Chemistry of the American Medical Association; and it is hoped that when our Association gets its much needed home and laboratory, coöperative work of this character may be engaged in.

In conclusion it is recommended by this Committee that in the case of articles which may be used for either food or drug purposes, the standard and method of assaying of same be made identical whenever practical so as to avoid double standards, one for foods and another for drugs.

Respectfully submitted,

CHARLES E. CASPARI,

L. F. KEBLER,

ELIE H. LAPIERRE,

WM. MITTLEBACH,

E. FULLERTON COOK, Secretary.

H. A. B. DUNNING.

L. D. HAVENHILL, Chairman.

REPORT OF THE COMMITTEE ON UNOFFICIAL STANDARDS.

The work of the Committee on Standards for Unofficial Drugs and Chemical products during the past year, has been more limited and less actual progress has been made than in the preceding years. In explanation of this statement, it is but fair to explain that the demands upon the time of a number of the members who are engaged upon the work of the revision of the United States Pharmacopœia precluded their giving the same amount of attention and time as heretofore given to the work of this Committee. Illness has compelled one of our most active members to temporarily discontinue his labors on the Committee, and death has invaded our ranks and has taken one of our active members. With the completion of the active constructive work on the Pharmacopœial Revision the members of this Committee can again divert their time from that labor to the necessities of this Committee, and it is hoped that in the near future more rapid progress in our work can be reported.

Since the Denver meeting, monographs covering the following topics have been presented and discussed in our correspondence:

Metaphosphoric Acid
Fresh Egg Albumen
Baptisia
Delphinium
Eucalyptus Gum
Mullein Flowers
Blackberries
Horse-nettle Berries
Agaric
Aselepias
Calcium Glycerophosphate
Dioscorea
Extract of Beef
White Ash Bark
Raspberries
Balsam Poplar Buds
Iron Peptonate
Juglans
Cow's Milk
Manganese Peptonate
Oil of Bitter Orange Peel
Oil of Bergamot

Hen's Egg
Peptone
Pumice
Sambucus
Strontium Carbonate
Lime Juice
Trillium
Fresh Egg Yolk
Iron and Manganese Peptonate
Juniper Berries
Mace
Menyanthes
Oil of Orange Flowers
Oil of Bay
Passion Flower
Potassium Chloride
Rennin
Senecio
Fresh Apple Juice
Trifolium
Verbena

In the near future, a number of these will be tentatively adopted by votes of the Committee. It is recommended that after such adoption they be referred to the Council and upon the approval of that body that they be printed in the Journal of the American Pharmaceutical Association.

In addition to the above list of topics the following items have been accepted by referees and their reports are anticipated in the near future:

Antimony Oxide
Burgundy Pitch
Chionanthus
Elecampane
Helianthemum
Mellilot Tops
Quinine Valerate
Strychnine Valerate
Galega
Orris
Parsley Root
Nanthoxylum Berries
Rumex

Antimony Sulphide
Caramel
Corydalis
Garlic
Hydrangea
Potassium Formate
Sodium Formate
Yeast, compressed
Nepeta
Pimpinella Root
White Sandal Wood
Zedoary
Thyme

As it is contemplated to include in the National Formulary Revision a number of formulas and drugs dismissed in the U. S. P. Revision, it will likewise be necessary either for this Committee or the Committee on National Formulary to give some attention to the standards for these drugs before they are admitted into the revised National Formulary and such approved monographs should be reported as part of the work of this Committee and printed in the Journal.

Respectfully submitted,

GEORGE M. BERINGER, Chairman.

THE UNITED STATES PHARMACOPEIA AND NATIONAL FORMULARY IN THEIR RELATION TO THE FOOD AND DRUG LAWS.

A. R. TODD, LANSING, MICH.

The discrepancies in the standards of the U. S. P. and N. F. soon become apparent when an attempt is made to enforce drug laws in which these works are named as standards. It is of course a well known fact that these two books were not originally intended to be standards in the sense that they are now used, but since Congress and many State Legislatures in their wisdom have seen fit to incorporate the standards laid down by the U. S. P. and N. F. into the laws, it becomes necessary for officials charged with the enforcement of the law to use them.

It is the purpose of this paper, therefore, to offer some suggestions based on practical experience as a drug official, which would, in my opinion, vastly increase the worth of the U. S. P. and N. F.

In the first place we need a U. S. P. and N. F. that will be standards in every sense of the word. In order to accomplish this we must have a definite standard for every preparation possible in these two books, as well as accurate methods for assays. In the present U. S. P. there are 961 articles which may be divided into two classes, those that have an assay and those that have not. The class

that has an assay may be sub-divided into two parts. Those that have an assay for each ingredient and those that have an assay for the principal ingredient.

A resume of the U. S. P. shows that 29 percent of the preparations fall in the first class and have an official definition as well as a reliable assay. The other 71 percent have neither. Of the first class about 1 percent have an assay for each ingredient and 28 percent have an assay for the principal ingredient only. Of the latter, viz, those that have an assay for the principal ingredient, only Tincture of Iodine is a good example. Potassium iodide is used in this preparation for two reasons: First, to aid in the solution of the iodine and second to keep hydriodic acid from forming. Therefore, if potassium iodide is such an important ingredient, it would seem that a method for its assay should be incorporated and furthermore the official definition should state the amount of iodide the finished preparation should contain. Another good example of this same class is Elixir of Iron, Quinine and Strychnine. It is my opinion that this all important preparation needs revising if any does.

Have you ever attempted to calculate the iron content? The elixir is made from the Tincture of Citro-Chloride of Iron N. F., which is made from the solution of Ferric Chloride U. S. P., which in turn is made from metallic iron. Attempt to calculate the iron content before an average jury and see where you land. Before you get through the judge, jury and even yourself will be disgusted. Then in all probability the lawyer for the defense will arise and move that the case be dismissed as there is no official standard or official method of assay. It would seem, therefore, that this preparation should at least have an official definition stating the percentage of the principal ingredients that it should contain.

Seidlitz Powders is another important preparation. The U. S. P. says that the blue papers shall contain 10.33 grams and the white 2.25 grams. Now what if the blue papers contain only 9.5 grams and the white 1.9 grams? Shall we condemn the sample or pass it? Here again shows the need of a minimum and maximum standard for the principal ingredients of each and every preparation.

We need more methods of assay and more definitions and if the degree of experimental error or tolerance limit to be expected, be given with each method, it will save much time and work on the part of the drug officials and be another step towards uniformity. As it is if a U. S. P. or N. F. product is sent in by one of our drug inspectors which the chemist has not analyzed before, he must first try out the method on a number of known samples to see just how much variation he can allow.

Tablet Triturates it seems present an obstacle. Since it is impossible to place every triturate in the U. S. P. or N. F., therefore, why not have a general provision reading somewhat like following: "All tablet triturates shall contain that quantity of medicinal substance which is represented on the container thereof."

It is my understanding that the use of the word "about" will be eliminated in the next edition. This I heartily approve of as there has always been and still is a question of just how much variation we must allow on account of this word. In this connection it seems that there are a number of other words or phrases that could very well be eliminated.

In regard to Spirit of Nitre, there seems to be a difference of opinion on the

keeping qualities of this product. By experimentation it has been shown many times that this product may be kept in perfect condition for a number of months if kept in accordance with the U. S. P. Therefore, it would seem that the phrase "When freshly prepared" could very well be eliminated from the definition.

In conclusion it seems that the crying need of the U. S. P. is a clear, concise definition for each preparation, giving a minimum and maximum standard for the principal ingredients and a method for their determination. I am heartily in favor of converting the U. S. P. into a book of simples and the N. F. into a book of formulas, with provisions for a yearly supplement to each. Further, I believe it might be well to have all methods worked out and adopted by the A. O. A. C. take precedence over the methods of the U. S. P., and after approval by some official body representing the revision committee of the U. S. P., these methods be printed as a supplement to the U. S. P. This would give us an opportunity to use new methods and at the same time feel that they were official, without waiting for the ten year meeting of the revision committee.

MICHIGAN DAIRY AND FOOD DEPARTMENT LABORATORIES, 1913.

DOING A FAVOR.

Mr. Business Man, there are two ways of conferring a favor, and if you can grasp the right way and stick to it, it will mean many hundreds of dollars in your pocket during the course of your business life. When you are asked to do a favor, make your decision mentally. If you have to give your answer on the spot, you may have to do some quick thinking, but take a few minutes and make your decision mentally. If your decision is no, say no, and let that end it. But if your decision is yes, say it with a smile.

If you have to make a sacrifice, let it yield you a return. Do it gracefully. Do it with a smile. It seems a simple lesson, yet some men never master it. They go through life, granting as many favors as other men, and always doing it in a grudging way. This is a huge mistake.

We know of no better lesson for a young business man to master than this: If you have to do a favor, do it gracefully, and with a smile.—*National Druggist*.

Section on Education and Legislation

Papers Presented at the Sixty-First Annual Convention

REPORT OF THE SECRETARY FOR 1912-1913.

FRANK H. FREERICKS, LL.B., CINCINNATI, OHIO.

Your Secretary understands the duties of his office to be largely those of a Reporter of current Legislative and Educational events in Pharmacy. At least the duties of the office seem to have been so understood since the time of the precedent established by Dr. Beal. It will be my endeavor to keep within the limitations defined, but nevertheless if the Reporter should in some instance assume editorial authority, he trusts that this will be pardoned, and he certainly will not permit it to be of frequent occurrence.

During the last association year the United States Congress has been in almost continuous general or special session, commencing, of course, with the convening of the regular general session in December of 1912. There have been regular legislative sessions in forty of the several sovereign states. Congress continues in session at this writing, as do also the General Assemblies of Georgia, Oklahoma, Pennsylvania, Wisconsin and that of the State of Texas, which is now meeting in special session. It is consequently not possible to report finally on the action taken by them respectively with reference to legislation of interest to pharmacists. The General Assemblies of the States of Arkansas, California, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Washington, West Virginia and Wyoming have been in session, and finally adjourned. The volume of legislation introduced in the several law making bodies of direct interest to Pharmacy has possibly been without precedent. The scope of intended legislation covers so wide a field, as to safely permit the statement, that somewhere every possible action and activity on the part of pharmacist was sought to be legislated about. Undoubtedly the banner for such intended legislation must be given the State of Massachusetts, where it is reported, that some one hundred and twenty-five (125) bills directly affecting pharmacy and some fifty (50) bills indirectly affecting it, were introduced at the last legislative session. It would be altogether impossible to report on all of the intended legislative changes, and in some instances where legislation enacted is not of direct application to Pharmacy we find ourselves compelled to either omit or to give but passing notice. The more important legislative enactments will be made a part of this report, in full, and in a few isolated instances we will add copies of defeated legislation, which seems to have been of special importance,

so as to afford an opportunity for studying the possible cause for defeat. Neither time nor your patience will permit of a detailed analysis and reference to all of the legislation enacted, and wherever possible, classification will be attempted with brief special reference, supplemented by complete copy of the respective laws. The classification referred to will, of course, need to be confined to the more important subjects, embracing pharmacy laws; Anti-narcotic laws; anti-trust laws; weights and measure laws; laws pertaining to the sale of drugs by unqualified vendors, and finally such miscellaneous legislation which cannot well be classified and which yet either because of its aims or novelty requires some special reference.

Before endeavoring to make a classification of the various legislative measures, with particular reference to their special points of interest we will show the reported legislation as enacted in the several states.

There was no legislation pertaining to Pharmacy in the States of Arkansas, Delaware, Florida, Michigan, Missouri, Montana, New Hampshire, North Dakota, Oklahoma, South Carolina, South Dakota, Texas and Vermont. Nevada not reported.

The states in which legislation has been enacted, including those where legislation of vital importance was defeated, which will be specially mentioned, are the following:

California.—Amendments to the Poison and Narcotic law. Action on Food and Drug law. Amendment incorporating Sherley Act provision, using the word "for" instead of "and," not reported.

Colorado.—No report secured.

Connecticut.—Amendments to the Pharmacy laws. Enactment of a Narcotic law.

District of Columbia.—A bill granting Dental Supply Houses special privilege was held in conference committee.

Idaho.—Change in the Pharmacy law affecting the sale of Poisons and particularly Narcotics.

Illinois.—A proposed new Pharmacy law was defeated.

Indiana.—Change in the Pharmacy law. Enactment of a Narcotic law. Enactment of a Trading Stamp law. There were defeated special registration bills, a bill allowing registration to all who had been employed in drug store for ten (10) years without examination, bills pertaining to the Sale of Liquor in drug stores, and a bill allowing physicians to register as pharmacists without examination.

Iowa.—A change in Itinerant Vendor's law. A bill to limit compounding or manufacture of preparations containing narcotics to pharmacists, was defeated.

Kansas.—A new Pharmacy law.

Maine.—A Narcotic law.

Massachusetts.—Change in the Pharmacy law, defining drug business, requiring the annual registration of stores where a drug business may be conducted. Laws relating to Wages paid to Women and Minors, and providing that employees shall not work one day out of seven, from these features drug stores are exempted. Law regarding the sale of Insecticides. There was defeated the following legislation: Amendment of the Food and Drug act. A bill requiring the

State Board of Health to have analytic work done for the Watch and Wards Society. A bill to consolidate the Boards of Pharmacy, Medicine and Dentistry. A bill regarding the adulterations of Confectionery. A bill making it a crime for a minor under seventeen (17) to have Cigarettes in his possession. Bills changing the Weight and Measure law. A bill relating to the sale of Medicinal Tablets and the refilling of prescriptions containing Narcotics. A bill regarding the manufacture and sale of Fruit Syrups. Bills regarding the sale of Liquor, and Liquor Licenses to Druggists. Bill regarding sale of Matches. A bill to prevent merchants from entering into agreements regarding the sale of merchandise. A bill establishing the hours of Labor for Registered Pharmacists and Assistants. A bill exempting Pharmacists from Jury Duty. A bill preventing pharmacists from forming corporations to carry on the drug business. A bill requiring physicians to keep records of Narcotic drugs dispensed by them, was favorably reported, and finally referred to the next session of the legislature. Many other bills of indirect interest to the Pharmacists were defeated.

Minnesota.—Amendments to the Pharmacy law, defining the authority of the board, and the manner of its appointment and governing the sale of certain poisons, etc.

Nebraska and Nevada.—Changes, if any, not obtainable.

New Jersey.—Anti-Trust laws affecting all business interests, and a so-called Unfair Competition and Unfair Trade Practice law.

New York.—A law regarding the sale and possession of Cocaine and Eucaïne. A number of amendments to the Pharmacy law were defeated. Weight and Measure law becomes effective.

New Mexico.—Several bills introduced but defeated.

North Carolina.—Changes in the Cocaine law.

North Dakota.—A limited prerequisite law taking effect January 1, 1913.

Ohio.—A law taking the enforcement of all Pharmacy, Poison and Narcotic laws from the Board of Pharmacy, and placing it with an agricultural commission. A new Narcotic law. A law requiring truthful advertising. A law extending the power of the State Board of Pharmacy in the matter of suspending and revoking Certificates. An amendment to the law relating to the misbranding of drugs, making false statements as to purity or therapeutic effect a punishable offense. A bill to regulate the itinerant vending of drugs was defeated.

Oklahoma.—A number of bills were introduced of interest to Pharmacists, but it is reported that none of them became laws.

Oregon.—A new Pharmacy law becomes effective with June 3, 1913, greatly extending the powers of the Board of Pharmacy, requiring annual registration; concerning the sale of Narcotics and Poisons; providing an annual \$200 License for Itinerant Vendors of Drugs, etc. Under regulations adopted by the Board of Pharmacy a limited pre-requisite law goes into effect with January, 1916, which is extended to a complete prerequisite with January, 1917.

Pennsylvania.—A Weight and Measure law. A law prohibiting the sale of Cigarettes and Cigarette Paper to Minors, and making possession of them by minors a misdemeanor. In this state an advanced Pharmacy bill was defeated, and an Anti-Narcotic bill having passed both houses of the legislature, was vetoed by the governor, both of said bills having the active support of the Pennsylvania

Pharmaceutical Association. A number of other pharmacy and narcotic bills were introduced and either defeated or not acted upon, as were also a number of other bills of lesser importance. A bill to specially regulate the sale of Bichloride of Mercury, introduced because of the late bichloride notoriety, was vetoed by the governor, as was also a bill requiring that prescriptions be compounded and dispensed under the supervision of a registered pharmacist or qualified assistant, holding a certificate of registration from the Pharmaceutical Examining Board. A bill supplementing a law requiring preliminary general education, and enlarging the authority and powers of the Examining Board with reference thereto, was also defeated.

Tennessee.—A bill was passed to permit any person with ten (10) years of drug store experience to register without examination, but this bill was vetoed by the governor. An effort was made by the Tennessee Association to secure the repeal of a so-called Doctor's bill, but this was not successful.

Utah.—A new Narcotic law was enacted.

Washington.—Unimportant changes in the pharmacy law.

West Virginia.—A law exempting pharmacists from the general prohibition law with reference to the use and sale of Official Preparations and Grain Alcohol under certain conditions, and providing under what conditions prescriptions for alcohol may be filled.

Wisconsin.—An amended Anti-Narcotic law under which the sale of Cocaine is limited exclusively on prescription. Wisconsin also made an appropriation for a Pharmaceutical Experiment Station to be operated in connection with the School of Pharmacy of Wisconsin of the State University. It is intended that this station shall co-operate with the United States Department of Agriculture in the cultivation of Medicinal Plants, and that it shall maintain a laboratory for the examination and standardization of medicinal substances.

Wyoming.—An Anti-Narcotic law was enacted.

United States.—Congress in August of 1912, enacted the Sherley bill, an amendment to the Pure Food and Drugs act under which false and fraudulent statement of therapeutic value constitutes misbranding. Congress enacted in March, 1913, another amendment to the Food and Drugs act requiring that measure, weight and count be stated on packages containing them, applicable only to foods. A vast number of bills are now pending in Congress, among which should be mentioned specially the Harrison Anti-Narcotic bill, the Sabbath bill, providing for sweeping amendments to the food and drugs act, similar to those of earlier date under the Richardson bill, the Owen Department of Health bill, the Oldfield bill, amending the patent laws, the Clapp-LaFollette, and several other bills to amend or supplement the Sherman Anti-Trust act; the Hughes bill, providing for an improvement in the status of pharmacists in the United States army. It should here be mentioned that the last Congress passed a General Deficiency bill, which was of some benefit to pharmacists, and also that pharmacists in the Public Health Service have secured increases in their salaries, as well as that under the naval appropriation bill the naval pharmacists now rank as other warrant officers, that is, they will be commissioned and have the rank and pay of ensigns.

A CLASSIFICATION OF THE MORE IMPORTANT LEGISLATIVE SUBJECTS.

Coming now to make a classification of the various more important legislative subjects, it must be understood, of course, that this of necessity can be only by comparatively brief reference. The various laws and some of the more important bills which failed to become laws will be added to this report, so that they may be studied in their entirety. First in the order of classification should no doubt be considered the changes in Pharmacy laws.

PHARMACY LAWS.

The states which have either enacted or considered changes in their Pharmacy laws have already been mentioned. Undoubtedly the most important changes, constituting practically new pharmacy laws, were sought for in the States of Illinois, Kansas and Pennsylvania, as advocated by the Pharmaceutical Associations of such respective states. The Illinois and Pennsylvania bills failed to become laws. The Kansas bill was changed in some of its important features as introduced under the direction of the State Association, before it became a law. As introduced these bills would have marked a splendid progress in Pharmaceutical legislation, though some features are open to criticism. It is of interest here, to dwell briefly upon some of their more important features which, no doubt, had much to do with their failure to become laws, or with being materially changed before they became laws.

Illinois.—The Illinois Pharmacy bill, which failed of enactment, provided as features of special importance, that patent or proprietary and all preparations containing cocaine, alpha or beta-eucine, morphine, opium, heroin, chloroform, cannabis indica, chloral-hydrate and acetanilide (subsequently amended), should be sold only by Registered Pharmacists. To become registered as a pharmacist it was required to show graduation from a college of pharmacy. Registered pharmacists from other states might become registered only on proof that they are graduates from a college of pharmacy. A distinction was made between Registered Pharmacists and Local Registered Pharmacists with a provision that certificates for Local Registered Pharmacists should not be granted in villages, towns or cities, the population of which exceeds five hundred (500). It was also sought to make unlawful the sale of all so-called narcotics, and chloroform, cannabis indica, chloral hydrate or acetanilide, or other poisons, or preparations, to habitual users of the same. To limit the sale of cocaine, alpha or beta eucaine, etc., entirely upon the written prescription of physicians, dentists and veterinarians, under certain prescribed regulations, and that the sale to pharmacists, physicians, etc., by wholesalers must be recorded in a book kept for that purpose. No doubt the prerequisite requirement, and the requirement to limit the sale of certain patent and proprietary medicines entirely to qualified people, had much to do with the defeat of the intended legislation. It is to be noted that the sale of cocaine, etc., was to be limited entirely upon the written prescription of physicians, etc., thus making it necessary for the Dispensing Physician to write prescriptions for such articles, and to retain them as a record, just as is the requirements for pharmacists.

Pennsylvania.—The Pennsylvania Pharmacy bill, which failed of enactment, contained the following features of special interest: A distinction between a

Pharmacy and what is termed a Licensed Store, and a licensed Pharmaceutical Laboratory. Licensed stores to be only at places at least three miles distant from a Pharmacy, to be only for the sale of certain drugs and preparations in original packages, put up under the supervision of a Pharmacist. A licensed Pharmaceutical Laboratory is defined to be a place other than a Pharmacy or Licensed Store, where drugs are compounded, and evidently not sold at retail.

The bill seems also to provide for the sale of proprietary medicines, and ordinary household remedies by other than those who are licensed to conduct a so-called licensed store. It provides an annual registration of the place of business. It prescribes both for a certificate of preliminary education and for college of Pharmacy graduation. It gives authority under certain conditions to refuse, suspend or revoke certificates. It would specifically permit practitioners of medicines, dentistry or veterinary medicine to administer and dispense drugs to patients, providing, however, that the drugs so dispensed conform to the standard of strength, quality and purity. It places the enforcement of the Pure Drug Laws with the Board of Pharmacy. It would require that all drugs other than physicians' prescriptions must be labeled to show the name of the article or preparation therein contained. It is not clear whether this means to show the contents of every preparation, which in such case would include proprietary medicines. It would require to have labeled as a poison any drug of which sixty (60) grains or less is liable to be destructive to adult human life, excepting from such provision physicians' prescriptions.

Kansas.—In Kansas the bill introduced through the Kansas Pharmaceutical Association was amended, and as amended it was enacted into law. The changes, however, were not with the approval of the Kansas Pharmaceutical Association. The most important change was with reference to a requirement under which physicians dispensing their own drugs, were required to write prescriptions therefor, except in cases of emergency, and to file these prescriptions just as pharmacists are required to do. This feature seems to have met with the determined opposition of physicians' supply houses, and dispensing physicians. The propriety of the requirement can hardly be doubted, and the Legislative Committee of the Kansas Pharmaceutical Association certainly deserves credit for advocating this advanced step. Other provisions were evidently intended to limit the sale of drugs to qualified people. Whether this intention would have been carried out under the bill submitted, leaves some room for doubt. The enforcement of the Pure Food and Drug Law is placed with the Board of Pharmacy. The bill as amended and as it finally became a law is made a part of this report.

Oregon.—The new pharmacy law which went into effect in the State of Oregon on June 3 of this year, places with said Board the duty to regulate the practice of pharmacy, the sale of poisons and the enforcement of the Pure Drug Laws. A list of drug stores within each municipality or district must be furnished the Board of Pharmacy annually by the police authorities, upon request. Certain narcotics may be sold only on the written prescriptions of physicians, but physicians who dispense them are exempted from this provision, and they are also exempted from any and every other provision of the act, including that which

governs the adulteration of drugs. The law provides for an annual \$200 license which must be taken out by itinerant drug vendors.

The changes in pharmacy laws as they have taken place in other states have been purely of an amendatory nature, and only those showing new features of general interest will be briefly mentioned, the amendments as enacted hereinafter being made a part of the report, where it has been possible to secure them.

Connecticut.—The enforcement of all laws pertaining to pharmacy and the dispensing and sale of drugs has been placed with the Pharmacy Commission. Preparations containing certain potent drugs may not be sold in country stores, and preparations recognized in the United States Pharmacopœia and National Formulary when sold in country stores must be prepared by a licensed pharmacist.

Indiana.—A provision was omitted which allowed graduated physicians as such to take pharmacy examinations in order to become registered as pharmacists.

Minnesota.—A noteworthy provision in an amendment to the Minnesota Pharmacy Law gives authority to support the State Pharmaceutical Association out of the registration fees which come to the Board of Pharmacy.

Ohio.—Under changes in the Ohio law all duties are taken from the Board of Pharmacy other than those of examination, and placed with an Agricultural Commission, the State Association having evidently sanctioned such a change in the law for the sole purpose of making the pure drugs law applicable to dispensing physicians.

ANTI-NARCOTIC LAWS.

No single legislative matter pertaining to pharmacy seems to have found greater attention than that of enacting anti-narcotic laws or of strengthening such existing laws by amendment. It is of great interest to note that during the past year six states have found it necessary to enact laws under which the sale of the more important narcotics must be made exclusively on the written prescription of physicians, etc., and such prescriptions must be kept as a record. The most noteworthy feature with reference to this being that dispensing physicians as well as pharmacists may so dispense only on such written prescriptions. The states which during the past year have enacted laws require dispensing physicians to write prescriptions for such narcotics and retain them as a record are, Connecticut, possibly Indiana, Maine in practical effect, Ohio, Utah, and possibly Wyoming. That such legislation is necessary for the proper supervision of traffic in narcotics can hardly be doubted, and it is certainly surprising to know that in direct opposition to the late laws of these state, Federal Anti-Narcotic Legislation as approved by the National Drug Trades Conference, would specifically exempt physicians from such requirement.

Indiana.—Indiana has enacted a new narcotic law, which marks a decided advance in such legislation, including as does the New York Cocaine law hereinafter referred to, a requirement for reporting all sales and distributions, once each month to the Board of Pharmacy, in detail. Such reports would seem to be necessary even with reference to prescriptions containing minimum quantities, while patent and proprietary medicines, etc., containing minimum quantities are specifically exempted. Under the Indiana law it is not to apply to the legitimate administration of said drugs, etc., by duly registered practicing physicians, veterinarians and dentists. It should be noted, that this exemption applies only

to the legitimate administration, and it would therefore seem not to apply to the dispensing of such drugs by physicians, etc., so that when such drugs are not administered direct by them, but are dispensed for use in their absence, then a strict construction of the law would seem to compel them to comply with the same requirements that are made of pharmacists when they are dispensed on physicians' prescriptions.

New York.—In the State of New York a new narcotic law having reference only to cocaine and eucaine, known as the Walker law has been enacted, which because of some of its special features is certainly of interest. It would require that a certificate be given to each person to whom these drugs or their preparations are dispensed on physicians' prescriptions setting out such fact. It would seem to prevent also the sale of these drugs by pharmacists to dentists or veterinarians. It would require all to keep record of sales made, and make report thereon, exempting only physicians, which seems to be an unwarranted exemption. It would limit also the amount of these drugs that may be in the possession of all who under the law may possess them. Some of the features of this new law are likely to cause dissatisfaction and annoyance, but as a whole it marks an enormous advance in the method of controlling the sale and distribution of cocaine. The law in full will be made a part of this report.

Pennsylvania.—A new narcotic law was sought by the Pennsylvania State Association. It succeeded in passing both houses of the Legislature, only then to be vetoed by the Governor. The bill was to affect the sale of opium, morphine, heroin, codeine, their salts, derivatives or compounds. As it passed both houses, it was equally applicable to pharmacists and physicians, in requiring that the sale be only on written prescription, which was to be kept as a record for a period of five (5) years open to inspection, making exceptions in preparations and prescriptions containing minimum quantities. The Governor's veto seems to have been based on a most curious reasoning, in that he states therein, that no exception is made in the act to permit duly registered physicians to furnish medicines containing these drugs or their derivatives or compounds, and because a prescription may be filled only with written order for its refilling. It seems hardly possible that the Governor could have been allowed to understand that a physician who himself dispenses could not write a prescription and then dispense on said prescription just as a pharmacist would. The Governor's veto of this bill is certainly to be regretted, as it contains a number of other important features which are equally desirable with the requirement for a prescription in every case.

FEDERAL ANTI-NARCOTIC LEGISLATION.

The most important matter with reference to narcotic legislation is undoubtedly embraced in what is now known as the Harrison bill, pending in the United States Senate after having passed the House. This bill has been approved by the National Drug Trades Conference. It would seek to supervise and control the distribution and sale of the more important narcotics throughout the United States. Under it every one who would handle these narcotics for any purpose must be registered, and the distribution and sale throughout the country is to be supervised and traced by a requirement for making and keeping records. Sales by pharmacists to consumers, except in preparations containing minimum quanti-

ties, of opium and its derivatives, must be exclusively on the written prescription of physicians. The aim of this intended law should meet with the highest commendation of every one. It is extremely unfortunate that the bill in its present form would practically exempt dispensing physicians from its operation, excepting only that they must register and make record of their purchases. This feature is likely to undo all benefit which would otherwise be derived from the legislation. The bill also in its present form is of very doubtful constitutionality with reference to its particular application to physicians and pharmacists, and will possibly be without the desired effect on that account. It also requires every physician whether he handles the drugs or not to become registered, as a licensed dealer in them, for otherwise pharmacists may not fill his prescriptions.

ANTI-TRUST LEGISLATION.

The anti-trust laws, both national and state, are of vital importance to the retail drug trade in so far as they concern price regulation. In the State of New Jersey two laws of particular interest in that connection were enacted, which indicate a change in the trend of this kind of legislation. One of these acts seek to made unlawful in the sale of commodities, discrimination not only as to persons, but also as to sections, with reference to different rates or prices for such sections. The other would prevent unfair competition and unfair trade practices, and among other things would make it unlawful to attract trade by depreciating the value of products, or by price inducement, which would discriminate, whenever the goods carry a notice prohibiting such practise. This act, though of very commendable intent, is of doubtful value because of its indefiniteness. The two acts will be made a part of this Report. By far the more important anti-trust legislation is pending in Congress, and the number of bills introduced on the subject are almost without limit. During the session a bill has been introduced by Senator LaFollette, which besides many other radical features, provides for making unlawful so-called exclusive selling agencies. It would also seem to give authority for the judicial establishment of reasonable prices on commodities. Because of its aims in so far as they concern the retail drug trade the Clapp Supplementary bill would seem of greatest importance. Curious as it would seem, the Clapp bill has been frequently referred to as providing for class legislation, and for that reason its constitutionality has been questioned. A careful reading of the bill should make it apparent that class legislation in the objectionable sense is entirely avoided. The bill aims to extend the federal corporation law, which now provides for the incorporation of labor organization, by permitting men engaged in all kinds of activities to incorporate associations not for profit, the only limitation being that those who would organize such corporations must be engaged in a like calling or business, and that the individual members thereof if engaged in business shall not be employing therein in excess of \$10,000. This last feature is entirely within constitutional limitations, but is not even likely to be the feature, which had been pointed out as objectionable in the sense of being class legislation. Aside from this, the bill provides for each separate class that they may be engaged in certain common activities, which as such are specifically designated, not to be in restraint of trade, and consequently not to come within the restrictions of the anti-trust law. To

sum up briefly the features of the Clapp bill in this connection it may be said that instead of providing for class legislation, which means the exclusion of one class as against the other, it aims to provide suitable legislation for every different class, in that it would prescribe definitely the activities in which such classes may be engaged as associations which shall not be regarded as being in restraint of trade.

WEIGHT AND MEASURE LEGISLATION.

As already stated, Congress has enacted an amendment to the Food and Drugs Act, which is to regulate the weight, measure or numerical count of goods in package form. This amendment, however, applies only to foods, and reads as follows:

Third. If in package form, the quantity of the contents be not plainly and conspicuously stated on the outside of the package in terms of weight, measure or numerical count; provided, however, that also exemptions as to small packages shall be established by rules and regulations made in accordance with provisions of Section 3 of this Act."

The Department of Agriculture, together with the other departments in control of the Food and Drugs Act, have commenced hearings and are ready to receive recommendations and suggestions, with reference to adopting proper regulations for the enforcement of this amendment.

In the State of New York a net weight and measure law was enacted in the year 1912, which is to go into force with February 1, 1914, and it is applicable to both food and drugs.

In the State of Pennsylvania such a weight and measure law was enacted during the last session of its legislature, but there are exempted from its application drugs, medicines, chemicals or pharmaceutical or proprietary preparations, used as medicines, and also toilet preparations. The New York law will be made a part of this Report, because of its direct interest to druggists. The only things to which it does not appear to be applicable are commodities for consumption on the premises; physicians' prescriptions; goods put in containers furnished by the purchaser; sealed containers where the numerical count is less than six; or the avoirdupois weight three ounces or less, or the measure two fluid ounces or less. Under a ruling it seems provided that packages of pills or solids which are of less than three ounces avoirdupois, when sold by weight do not come within the provisions of the law, and it seems also provided that the retailer will not be held liable where the goods are purchased from a wholesaler or manufacturer residing in New York, if a guarantee is made.

LAWS PERTAINING TO UNQUALIFIED DRUG VENDORS.

During the year a number of states enacted laws requiring annual license fees of from one hundred to two hundred dollars, for itinerant drug vendors. A number of other states have for some time had similar laws on their statute books. The constitutionality of such laws may be seriously doubted, on the ground that they discriminate between itinerant vendors of drugs as compared with itinerant vendors of other merchandise. Such discrimination being emphasized by the fact that nothing in the laws would justify it because of the

need for special qualification in the sale of drugs, by itinerant vendors. In other words, the laws contain nothing which would seem to base such special legislation on the ground of requiring special qualification. Laws of this kind, in order to be valid, must either apply with equal force to all itinerant vendors, whether of drugs or of other merchandise, or they must be based on the ground that special qualification and supervision is required to safe-guard the public health, and in such case they can most likely be *not made* to single out the itinerant vendor of drugs, but must apply with equal force to the vendor who has a fixed place of business. This is emphasized by a late decision of the Illinois Supreme Court.

In the State of Ohio an itinerant vendor's bill was introduced which possibly represents the most up to date effort to regulate such traffic. It, however, was defeated. The only doubtful feature of that intended law rests in the fact that a distinction is made between the unqualified itinerant vendor as compared with any other unqualified vendor. There may be some reason in the argument that with reference to the sale of drugs, the public good requires special supervision of unqualified itinerant vendors, which need not be had for unqualified vendors who have a fixed place of business, but the chances are that such a distinction would not be upheld by the court. A copy of the defeated bill, because of the advanced ideas therein set out, is made a part of this Report.

MISCELLANEOUS LEGISLATION.

Aside from the legislative activity which we have sought to classify, there are a number of legislative enactments in the different states which deserve some attention but which because of pertaining more or less to only one or a few states, can hardly be separately classified. Among the more important of these we find the following:

Liquor Laws.—There has been considerable legislation to govern the sale of liquor by pharmacists, but most of this is of interest only to the particular states in which it was either enacted or proposed. An exception to this rule is found in the State of West Virginia, which because of its prohibition laws lately enacted, and because of similar laws existing in other states, or being under consideration, makes it worth while to study the features of a prohibition law which provide exemptions for pharmacists, and which evidently are entirely satisfactory to the pharmacists of West Virginia, where such law exists. In the West Virginia prohibition law, Section 4 provides for exemptions which are applicable to pharmacists. Under such exemptions, grain alcohol may be kept by pharmacists for medicinal, pharmaceutical, mechanical and scientific purposes, as well as preparations made in conformity with the United States Pharmacopœia or National Formulary. Grain alcohol may be sold on the prescription of a physician, under certain restrictions. Also for pharmaceutical, scientific and mechanical purposes, and then only on the presentation of an affidavit. The section referred to is made a part of this Report.

Cigarette Laws.—The State of Pennsylvania seems to have enacted a law prohibiting the sale of cigarettes to minors which is evidently the latest word on this subject, and it is, therefore, made a part of this Report.

Honest Advertising Laws.—Primarily through the activity of Mr. John Irving Romer, editor of *Printers' Ink*, a bill was introduced in the legislatures of many states which is to govern and make unlawful deception and misleading statements in advertising. Of the many states in which laws of this kind were introduced it can at this time be reported that they were enacted at least in the states of Michigan, Nebraska, New Jersey, North Dakota, Minnesota, Ohio and Washington. The bill as drawn is made a part of this Report. It has been criticised somewhat because it would make every false or misleading statement a misdemeanor without regard to such statements having been knowingly made.

Laws Governing Employment.—There seems to be of late quite an effort to make labor laws, and laws limiting the hours of employment, applicable to pharmacy. It would seem that laws of that nature were defeated in Massachusetts and Wisconsin. They seem to have had some support on the part of drug clerks. A number of states have enacted legislation with reference to the hours of employment for women and children, and where so enacted, these laws seem to govern their employment in drug stores as well as in other places of business.

Laws Governing the Sale of Bichloride of Mercury.—Owing to an epidemic of accidental deaths and suicides from bichloride of mercury, legislation was agitated in a number of states, and actually introduced in the State of Pennsylvania to strictly govern its sale. In Pennsylvania such special legislation required the veto of the Governor to defeat it. Agitation for this legislation would demonstrate the spasmodic effort of some, to legislate upon a given subject when it has received sufficient newspaper notoriety. To single out bichloride of mercury for special legislation from other equally or even more dangerous drugs and chemicals, seems the height of absurdity. On the other hand there would be some good ground for laws requiring that dangerous poisons, drugs or chemicals in tablet form, be required to have some distinctive color or shape, though it would be difficult possibly to draw the line. The best method of preventing epidemics of suicides from the use of dangerous poisons or drugs seems to be that of avoiding the suggestion through the daily papers.

Tariff Legislation.—Of course the proposed tariff legislation now under consideration in Congress has besides its general interest a special interest for druggists because of contemplated changes in Schedule (A). A general revision downward seems contemplated, and will no doubt be carried through. The only proposed advance in tariff rates is noted with reference to opium, and on this article the contemplated increase in rate is fully one hundred per cent.

Wood Alcohol.—Owing to the generally recognized need for legislation to protect against error and the danger from the use of wood alcohol, it is of interest to know that an ordinance governing its sale, is under consideration in the city of New York, and the intended ordinance is here copied. The use of the words "Wood Poison" has been generally criticised, and the words "Wood Naptha" have been advocated in their place.

Section 1. Any substance known as wood alcohol, in its crude or deodorized form, having the chemical composition known professionally as CH_3OH , is hereby prohibited from being sold under any other name than "wood poison," nor shall it be lawful to use said chemical

composition in any medical or toilet preparation. Said chemical composition, when sold as such, shall be labelled with a regulation poison label, with the following words added:

"This fluid taken internally, inhaled or used externally, is likely to produce blindness." Said words shall be printed in type not less than eight point, as known to the trade, in red letters, on a white field.

Section 2. Any person guilty of a violation of this ordinance, or any part thereof, shall, upon conviction thereof before a city magistrate, be punished by a fine of not less than \$20 nor more than \$50, and in default of payment of any fine so imposed, shall be committed to the city prison for a term of ten days, each day of imprisonment to be taken as a liquidation of each dollar of such fine.

JUDICIAL DECISIONS AND ADOPTED REGULATIONS OF GENERAL INTEREST.

There have been a few decisions during the year which are of such vital import to Pharmacy, as to require some special reference. This is also true in the case of some regulations which have been adopted by department officials. Only those of the greatest interest will be referred to.

The Corn-Syrup Case.—Under the Food and Drugs Laws of Wisconsin a case of alleged misbranding was brought, because of the use of the words "Corn Syrup" for "Glucose." This case was carried to the Supreme Court of the United States from the Wisconsin courts. The case concerned a shipment of so-called "Corn Syrup" from another state into the state of Wisconsin. Under the laws of Wisconsin it was admittedly misbranded, and such was found by the Wisconsin courts. However under the regulations adopted, for the enforcement of the Federal Food and Drugs Act, the branding of the article as "Corn Syrup" is permitted. The case involved a conflict of laws as between the state of Wisconsin and the United States. It concerned a shipment of the article, which was still in Inter-State Commerce and had not become property subject to the special jurisdiction of the state of Wisconsin, in keeping with the established principles of the law. The Supreme Court of the United States held that so long as the goods were in Inter-State Commerce the Federal law applied and the law of Wisconsin did not apply. Much has been said of the case, but a correct analysis of it simply shows a re-affirmance of a long-established principle. Nevertheless it emphasizes the need for like legislative measures pertaining to foods and drugs for both the Federal Government and for the several states.

The Sanatogen Case.—This is officially known as the case of the Bauer Chemical Company vs. James O'Donnell. It involved the right of a patentee to control the selling price of his patented product, in the hands of dealers who had bought and become the owner of such product. Until the decision rendered in this case, it had been generally recognized to be the law, that a patent gave such right of price restriction. The Supreme Court of the United States in a majority opinion of said court rendered in this case, for the first time has held that such right does not exist, and that even with reference to articles of merchandise protected by patent, there can be no price restriction by the manufacturer, to control the dealer, when such dealer has become the owner of the goods. With this decision all efforts at price protection, where goods have changed title, are finally declared illegal under the existing laws. While the decision would appear to be the last blow at price protection, it is likely to have great influence in bringing about a change in the laws with reference to the right of price protection.

The Pepsin Labeling Case.—This case officially known as that of the state of Pennsylvania vs. V. W. T. Tobin, is of general interest, in that it announces the

established limitation with reference to the right of making regulations, which in effect would be law-making. In other words, it brings out the point, that Boards and Officials who are charged with the enforcement of a law, must in the making of regulations keep within the terms of the law, and not adopt regulations of a character which would really add further law to the existing law. It is not necessary here to discuss whether the Board in question in this particular case, exceeded its authority in making regulations. There seems to be difference of opinion as to whether the case in question was decided on the real point at issue, but whether gratuitously or otherwise, the fact stands out prominently, that in adoption of regulations for the enforcement of laws, Boards and Officials must not endeavor by means of attempted regulations to extend the true scope of the law which they are empowered to enforce. This is of particular interest to Boards of Pharmacy, for the reason that the latitude given them in the making of regulations is frequently very wide. The point in mind, is, that even though a given law apparently authorizes the making of rules and regulations, which extend the true scope of such law, it can nevertheless not be validly done, because a law making body cannot constitutionally delegate its law making powers.

The National Insecticide Act.—Under this Federal Act of 1910 a ruling has been made by the governing departments, that antiseptics and disinfectants come within the provisions of said Act, and must be labeled in accordance with its requirements.

Parcel-Post Regulations.—Since the last annual convention the Parcel-Post Law has become effective. The early regulations with reference to it are now well understood. The law as enacted after great deliberation and study, was criticised because of an apparent latitude given the Postmaster General acting under the direction and approval of the Inter-State Commerce Commission, to adopt regulations, which substantially would amount to extending the scope of the law. Some who supported the law as enacted, denied this, and claimed also, that no regulations would be adopted to extend the scope of the law, even though such power apparently existed under it. At this time it is evident, that those who took such position, and made such claims, were in error, because under the direction of the Inter-State Commerce Commission, changes proposed by the Postmaster General have now been adopted in the form of regulations which practically extend the scope of the law. Aside from the collection feature on parcel-post packages, and the limited insurance thereon, which went into effect with July 1st, the new regulations increase the limit of weight for parcel-post packages from eleven (11) pounds to twenty (20) pounds, and also make material changes in the rates for the first two zones established. The ruling of course places on their metal, all who have maintained that the law did not provide for such authority, and the matter is now one of general inquiry and investigation. Those who have made the contention, that a parcel-post would be of injury to merchants in smaller towns, and to retail merchants generally, and who accepted the zone law as of least evil, will undoubtedly find much to disturb them in this late action of the Postmaster General and of the Inter-State Commerce Commission.

Enforcement of Postal Laws.—Attention is here called to Section 217 of the Criminal Code of the United States. It forbids the mailing of poisonous agents

excepting under certain conditions to be specified by the Postmaster General. It prohibits entirely the sending of intoxicating liquors of any kind. Under this law the Postmaster General has adopted regulations which govern the mailing of medicines, containing poisons and anæsthetic agents, which permits manufacturers and dealers to send to licensed physicians, surgeons, pharmacists and dentists, when enclosed in packages, conforming with the conditions prescribed in Section 496 of the postal regulations. That is, when such articles are not of their own force dangerous or injurious to life, health or property, and when not in themselves unmailable, they may be admitted to the domestic mails from the manufacturer and the dealer therein, to licensed physicians, surgeons, pharmacists and dentists, when enclosed in packages in conformity with the conditions prescribed in Section 496. Such packages must contain the label of dealer in the article mailed. Section 496 has to do with requiring that the containers properly protect the article, but at the same time allow examination of the packages. It will be noted therefore, that medicines which in whole or in part are made up of poisons cannot be sent through the mails to the consumer. In connection with the use of the mail for the sending of articles of drug merchandise, much concern was caused during the year because of the arrest of many drug manufacturers and dealers for sending alleged prohibited articles through the mail. It is undoubtedly true, that many who were thus charged with a violation of the law, were entirely innocent of any guilty intent, and it is apparent that innocent persons may find themselves in trouble because of this feature of the law. It would seem the part of wisdom to secure a clearer understanding, and more definite rulings, so that persons who have no intent whatever to violate any law, will not innocently be brought into such technical violation.

EDUCATIONAL PROGRESS.

It would appear, that the largest part, if not all of the matter pertaining to educational advancement as originally of interest to this Section, is now more properly within the province of the Conference of Pharmaceutical Faculties, and the National Board of Pharmacy Associations. Your secretary has therefore sought to learn only advances which may have taken place in the various colleges, departments and schools of pharmacy. It is certain, that the information secured, is incomplete, but nevertheless it is a pleasure to report the advancement made in many institutions regarding which information has been secured. It must be understood however, that this information cannot in any way be regarded as complete. Many institutions, are maintaining the high standards which they have heretofore established, and no special reference will be made to them. The following institutions are recorded to have made changes as respectively indicated by them:

The Brooklyn College of Pharmacy.—It is reported that this college has been completely equipped with electricity for all purposes, thus enabling it to add features for advanced work. In addition to the two years course for the Degree of Graduate in Pharmacy, the college has arranged for a three years course for Graduate in Pharmacy leading to the degree of Master of Pharmacy, and a three years course for all applicants having four years of High School to their credit

at the time they commence college work, which leads to the degree of Pharmaceutical Chemist.

Buffalo College of Pharmacy.—There is reported an advancement of the course to 1250 hours. Seventy-five (75) percent passing mark in all subjects. Attendance requirements of ninety (90) percent.

Columbia University.—It has been arranged to meet all the requirements of the New York State Educational Department, and the number of hours of instruction will exceed the requirement by 51. It is also contemplated to work toward a gradual increase in the entrance requirement until it shall be four years of High School work.

School of Pharmacy of the University of Kansas.—It is reported that the entrance requirement will now be for three (3) years of High School training instead of two. In the fall of 1914 a four years training will be required.

Louisville College of Pharmacy.—The number of hours have been increased to 1256, and will be eventually increased to 1500 hours. A course on Legal and a course on Commercial Pharmacy has been instituted, as well as a series of Industrial Lectures.

Maryland College of Pharmacy, University of Maryland.—There have been added a course in Pharmaceutical Arithmetic and one in Pharmaceutical Latin, for the Junior year. An increase to the course in Dispensing and a course of Lectures on Pharmaceutical Jurisprudence for the Senior year. The total hours have been increased from 1347 to 1462.

Massachusetts College of Pharmacy.—A site for a new college building has been secured. There have been added courses on Commercial Pharmacy, Pharmaceutical Latin, and Pharmaceutical Arithmetic.

University of Michigan School of Pharmacy.—The course leading to the degree of Pharmaceutical Chemist has been increased to three years, and a new course instituted for the degree of Ph. G. for two years work.

University of Minnesota College of Pharmacy.—A new four story fire proof college building has just been occupied. A medical plant laboratory has been instituted.

New Orleans College of Pharmacy.—The New Orleans College of Pharmacy is now affiliated with the Loyola University. A course on Commercial Pharmacy has been added. The requirements of the American Conference of Pharmaceutical Faculties have been met.

Medico Chirurgical College of Pharmacy of Philadelphia.—The course leading to the degree of Pharmaceutical Chemist has been changed to a three year course.

Northwestern University School of Pharmacy.—Entrance requirements have been raised to those of a graduate from an accredited High School, which constitutes an increase of three years of High School work.

Philadelphia College of Pharmacy.—There has been a month's increase in the college year.

Vanderbilt University, Department of Pharmacy.—The entrance requirements have been raised to three years of High School training.

Medical College of Virginia, School of Pharmacy.—A consolidation of the Department of Pharmacy, University College of Medicine, Virginia School of Pharmacy, Medical College of Virginia, became effective July 1st of this year. The entrance requirements have been advanced, the requirement for the degree of Ph. C. being graduation from an approved High School.

University of Washington College of Pharmacy.—A fifth year of work has been added to the curriculum, leading to the degree of Master of Science in Pharmacy.

(An addition to the above report, showing the texts of various proposed and enacted measures will appear in the next succeeding issue.)

THE DAY OF THE BIG MOUTH.

Never has there been greater opportunity for men of really great ability—or big men—than there is right now. Business has grown bigger and bigger, and the call for big men has grown sharper and more insistent with it.

This is what has made this the age of the young man—the lack of big bore and large caliber guns in the ranks of the older and seasoned men.

Business has turned in despair to the younger fellows, and is begging them to be big—pleading with them to rise to the occasion—tempting them with enormous salaries, commissions, bonuses and partnerships.

But there is quite naturally a smaller percentage of big men in the younger set than among their older confreres, and the demand, already far in excess of the supply, goes on multiplying and increasing day by day.

But while there is a dearth of big men, there never was a time when there were more little men who think themselves big. Nor has there ever been a time when a little man with a big mouth could raise more of a row or disturbance.

It is the big mouth, not the big brain, that catches and holds the crowd. The big mouth is framing legislation, grabbing at fat offices, challenging established customs, questioning the wisdom of the founders of the republic, and impugning the integrity of all who have the courage to resist the advancing tide of unreason, unrest and destruction.

How long the big mouth will be the vogue, heaven only knows. But it dominates in politics and in legislation. It obtrudes upon every effort for reform, and, worst of all, it deludes a lot of credulous people into the belief that sound is better than sense, and noise superior to wisdom.

Come on, Doctor Sharp—bring on Vasectomy. Vive la eugenics.—*The Billboard, through The National Druggist.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixty-First Annual Convention

DROP WEIGHTS.

CURT P. WIMMER, PHAR. D. AND LEO ROON, PH. C.

It is a fact well known to physicians and pharmacists alike that the method of prescribing liquid medicines in the form of drops is not an accurate one. The only valid excuse for the use of the drop is the convenience of measuring, or better, dropping. As a unit of measure, a drop is decidedly unsatisfactory. Nevertheless we know that a large number of medicines are invariably dispensed or ordered to be taken by the drop.

The size and weight of drops varies considerably and depends upon many factors, such as the consistency of the liquid, specific gravity, cohesion, temperature, etc.

As soon as we use a certain standard drop as a primary unit and standardize all others accordingly we couple convenience with accuracy. The International Conference at Brussels in 1902 adopted a dropper which was constructed so as to deliver 20 drops of distilled water at 15° C. to weigh exactly one gram. The outer diameter of the delivery tube was to be exactly three millimeters.

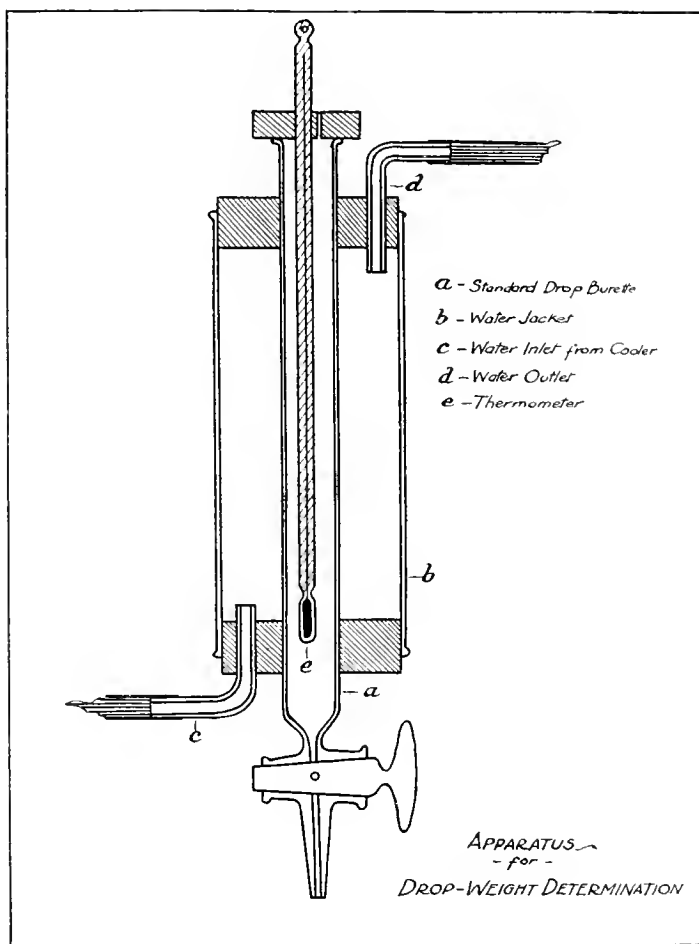
A number of so-called normal droppers are on the market, for example the Eschbaum Normal Dropper, the Lamprecht Patent Dropping Flask, the Viginta Drop Glass of Steinbuch, and others. All of these are constructed to conform with the requirements of the Brussels Conference. Having occasion to determine the weight of a certain number of drops of a liquid, it occurred to the authors that a burette might readily be constructed and used to deliver the 20 drops of distilled water at 15° C. to weigh one gram. The firm of Greiner & Co. furnished a burette according to our directions—20 cc. burette accurately graduated in tenths, 3 mm. in diameter for dropping surface delivering 20 drops of water to weigh one gram at 15° C. Upon testing the burette was found to be exact provided a certain rate of dropping was maintained. The difference in weight of the drop due to a changed rate of dropping amounted to about 1 to 2 milligrams per drop.

In order to maintain the temperature during the process of dropping, the burette was jacketed and water cooled to 15° C., passed through it. A thermometer was suspended in the burette. The accompanying sketch illustrates the apparatus used.

By means of this apparatus a large number of drop weights of the more common potent medicines were determined and were found in most instances to agree closely to those determined by Dr. Frederick Eschbaum. Eschbaum was the

first scientist to advance definite maxims relative to drop weights which maxims are interesting as well as important and we can only confirm the accuracy of such as we had occasion to try out. They are: First, the drop weights of solutions, even of the most concentrated ones, are practically equal to those of the solvent.

To cite an example, an aqueous 50 percent potassium iodide solution will have



almost the same drop weight as pure water and aqueous solutions of alkaloids, sugar, salts, extracts or gums have the drop weight of water. Alcoholic tinctures have the drop weight of alcohol.

Second, different liquids have different drop weights. The authors of this paper believe that the drop weight can be used, to a certain extent at least, to help in the identification of certain pure liquids and preparations.

Third, the drop weight depends upon the size of the dropping surface. The standard for this is 3 mm.

Fourth, Eschbaum states that rate of dropping as well as temperature may be neglected for practical purposes. The authors find that it is quite necessary to

preserve the temperature carefully and also to maintain a standard rate of dropping to get accurate results.

A number of drop weights of some of the more important medicines, as determined by Mr. Roon and bearing out the above statements, is appended.

Substance.	1 gm. equals at 15° c. Drops.	1 Drop weighs Grams.	1 Drop measures cc.
Acid, Hydrochloric.....	19.5	.051	.042
Acid, Hydrocyanic, Diluted.....	20.0	.050	.045
Acid, Nitric.....	22.9	.043	.025
Alcohol, Ethyl.....	65.5	.015	.020
Chloroform.....	58.8	.017	.010
Creosote.....	37.4	.027	.022
Ether.....	90.0	.011	.015
Fluidextract Belladonna.....	55.2	.018	.020
Fluidextract Ergot.....	52.6	.019	.020
Glycerin.....	23.1	.043	.030
Guaiacol.....	38.1	.026	.023
Oil Santal.....	41.5	.024	.020
Oil Wintergreen, Synthetic.....	40.6	.025	.020
Phenol, Liquified.....	35.5	.028	.025
Solution Arsenic and Mercuric Iodides.....	19.7	.051	.045
" Arsenous Acid.....	19.3	.052	.045
" Iodine, Compound.....	32.	.027	.025
" Potassium Arsenite.....	21.1	.047	.045
" Potassium Bromide, 10%.....	20.0	.050	.050
" Potassium Iodide, 50%.....	18.7	.053	.035
" Strychnine Sulphate (f5i=1 gr.)....	20.0	.050	.045
Spirit Ammonia Aromatic.....	57.3	.017	.020
Spirit Nitrous Ether.....	65.5	.015	.017
Syrup Ferrous Iodide.....	18.9	.053	.040
Tincture Aconite.....	56.3	.017	.020
" Digitalis.....	48.1	.021	.020
" Ferric Chloride.....	53.3	.019	.018
" Hyoscyamus.....	50.8	.020	.020
" Iodine.....	63.3	.016	.015
" Nux Vomica.....	57.3	.018	.020
" Opium.....	50.9	.019	.020
" Opium Camphorated.....	50.9	.019	.020
" Strophanthus.....	57.2	.017	.020
Water, Bitter Almond.....	29.3	.034	.037
Water, Distilled.....	20.0	.050	.045

LIQUID SHAMPOO OR TOILET SOAP.

ERNEST R. JONES, PH. C.

Many inquiries have appeared in the current issues of the various drug journals for a liquid soap that a pharmacist could prepare and dispense under his own label. It is my purpose to discuss such a preparation and give working formulas for the same.

Selection of Fat.—Practically all of the oils or fats are adaptable to making liquid soaps excepting perhaps castor oil, my experience with this oil showing it to produce a soap having very poor lathering qualities.

Corn oil makes a good soap; saponifies easily and the soap is free from objectionable odor. It lathers quickly but the lather is too light. Sweet almond

oil and olive oil are too expensive, and these soaps also give too light a lather. Lard and tallow make very good lathering soaps but are hard to saponify.

Cottonseed oil is cheap, but is very hard to saponify without the presence of alcohol or other fats, and the lather is not heavy enough for a good shampoo.

Soaps made from any of the above oils or fats are poor latherers when used in hard water. It should be remembered that the hardness of water is due to calcium salts and sometimes iron and magnesium. These salts when brought in contact with soap solutions form oleates and stearates of the corresponding bases or metals, and as these compounds are insoluble they will not form a lather. Coconut and palm nut oils require about twice as hard a water to destroy their lathering qualities as does any other ordinary fat. For this reason, soaps that are to be used in hard waters should contain a good proportion of one or the other of these.

The question of solubility of soaps is also an important fact to be considered in obtaining a quick lather. Coconut and palm oils are of a peculiar composition and contain glycerides which when saponified are very soluble in water. An oleate of soda or potash is about ten times more soluble than a stearate, hence the more olein a fat contains the quicker it will lather. But there follows another difficulty: the lather from an oleate is too light to be entirely satisfactory, and consequently needs a certain amount of a stearate to give it body.

For these reasons I find that a combination of coconut oil, cottonseed oil, and stearic acid is required to produce the best lathering soap. The stearic acid might be replaced by tallow, as tallow contains considerable stearin, but I prefer the stearic acid as it greatly hastens the saponification by forming a soap at once with the alkali. This soap acts as an emulsifier between the oils and balance of alkali, thus rendering the completion of the saponification comparatively easy.

Alkali.—Potassium hydrate is the principal alkali used.

A mixture of sodium and potassium hydrates is said to impart better lathering qualities to a soap than when either is used alone. Only a very small quantity of sodium can be used, however, if the soap is to contain much stearate, as it would cause the soap to "jell" or harden.

Potassium Carbonate.—This is an excellent detergent. When used as a shampoo with soap, it leaves the hair light and fluffy. It is also an excellent water softener thus adding to the lathering properties of the soap.

While it is a very necessary ingredient of a good shampoo, it will be found too harsh for general toilet use for persons with a delicate skin. Such persons should not attempt to use a liquid soap for toilet purposes other than as a shampoo. They should be advised to buy only a high grade toilet soap, free from excess of alkali, and in certain cases, even an unperfumed soap will be necessary.

Precipitation.—Liquid soaps if allowed to stand in a cool place will give a white precipitate. The amount of this precipitate depends directly upon the amount of stearate present, and is caused by crystallization of the stearates or acid stearates. It is generally redissolved if allowed to stand a few hours in a warm place.

For this reason some persons may prefer to dispense liquid soaps in dark colored bottles.

Hardness of Water.—In different parts of the United States, different degrees

of "hardness" of water are met with. For this reason, I propose to give three different formulas, in order that one may choose the one adapted to his particular locality. For instance the "Soft Water" formula contains plenty of cocoanut oil for such water as is found in the vicinity of Boston. The "Medium Hard Water" formula would be satisfactory for such water as found in the vicinity of Detroit, while a district like Kansas City would require the "Hard Water" formula.

The formulas I would suggest are as follows:

Formula for 2500 cc.	Soft Water.	Medium Hard Water.	Hard Water.
Cocoanut Oil.....	100. gms.	200. gms.	300. gms.
Cottonseed Oil.....	400. gms.	300. gms.	200. gms.
Commercial Stearic Acid.....	100. gms.	100. gms.	100. gms.
Caustic Potash, U. S. P., 85%.....	120. gms.	126. gms.	132. gms.
Caustic Soda, U. S. P., 90%.....	12. gms.	12. gms.	12. gms.
Alcohol	125. cc.	125. cc.	125. cc.
Potassium Carbonate.....	20. gms.	30. gms.	40. gms.
Soft or Distilled Water.....	q. s.	q. s.	q. s.
Talcum	15. gms.	15 gms.	15. gms.

Melt the stearic acid and oils together and add the caustic potash and soda dissolved in 1000 cc. soft water. Boil carefully, to avoid burning, adding more water as necessary, until no alkali is perceptible upon tasting. Then add the potassium carbonate dissolved in 250 cc. soft water and boil for two hours more. Allow to cool, add the alcohol and perfume if desired, and add sufficient soft water to make 2500 cc. Let stand three days, or longer if possible, add talc and filter through double filter-paper until clear.

Perfume.—For cheap odors, oils of rose, geranium, sassafras, lavender, bergamot, caraway or citronella are good. Terpeneol is also used, but is claimed by many to be irritating to the skin if used in too large a quantity.

For a pleasing, delicate odor of lilac character, I have found the following to be satisfactory, this amount to be used to perfume 2500 cc. liquid soap of the above formula:

Syringeol	5.0 cc.
Oil of Rose, Artificial.....	0.5 cc.
Oil of Jasmine, Artificial.....	0.5 cc.
Terpeneol	7.5 cc.
Oil of Rose Geranium.....	0.5 cc.
Oil of Cloves.....	0.5 cc.
Artificial Musk.....	0.5 gm.
Alcohol, qs. ad.....	20.0 cc.

Place in bottle and warm gently and shake until the musk dissolves.

Colors.—Some may desire to color their Liquid Soap.

For Yellow—Use 1 grain Lieber's Deep Yellow No. 3003 to 2500 cc. Liquid Soap.

For Green—Use 1 grain Lieber's Vertoline Green No. 1855 to 2500cc. Liquid Soap. A darker green may be had by adding a trace of caramel.

Pine Tar Shampoo.—Add about 10 grams of Pine Tar, dissolving this in the alcohol. The insoluble portion is removed when filtering, leaving a clear dark liquid which emits the tar odor strongly when used.

Conclusions.—The above formulas make excellent appearing products. They

produce an abundance of lather in all kinds of water, and when used as a shampoo, leave the hair light and fluffy. They contain no free caustic alkali, as an excess of fat over the amount of caustic alkali is used, and potassium carbonate is used to complete the saponification of the balance of the fat.

Do not expose liquid soaps to the cold as it causes precipitation of stearates. These will generally redissolve if the liquid is allowed to stand in a warm place.

NOTES ON THE DECOMPOSITION OF NEO-SALVARSAN.

FREDERIC E. NIECE, PHARM. D., NEW YORK CITY.

That Neo-Salvarsan is capable of producing toxic symptoms if used while in a decomposed state is a fact that must be more seriously borne in mind by those who have occasion to use it but once in a while.

By reason of its peculiar loose combination, it tends to deteriorate at the slightest provocation, eventually changing, within a few hours, from that of a comparatively harmless medicament, to that of a very poisonous and dangerous compound.

This is particularly true in those instances where the product is made into solution some hours in advance of its use.

This is a practice, however, that is being rapidly disregarded and one that Ehrlich himself greatly deplotes, for it is generally known that Neo-Salvarsan is more readily altered by exposure than Salvarsan. Ehrlich's precautions along these lines are emphatic and must be zealously heeded in order to avoid serious troubles. With the more improved appliances of administration now at our command, solutions barely become a half hour old before they are used. They should be used at once, however, after preparation.

It has been observed nevertheless, that toxic symptoms have developed in many cases notwithstanding the most careful technic. In this connection no one has as yet advanced a satisfactory explanation of the causes leading up to these conditions. Judging from what has been gleaned from this brief study, it would seem, that the body fluids, and the tissues and organs that convey them, would in a large measure be responsible for these symptoms by reason of the alteration of this compound after introduction into the body.

After once Neo-Salvarsan has been released from its sealed enclosures it begins to suffer a change. This change begins at once, but proceeds slowly as crystal by crystal becomes involved, by reason of atmospheric contact. So delicate is this decomposition at first, that it is imperceptible to the unaided eye.

This remains unnoticed until an advanced stage is reached, when suddenly it manifests itself by a darkening of the substance.

It was observed that high temperatures with a moist atmosphere, caused decomposition more readily than low temperatures with drier surroundings. Hence, to keep Neo-Salvarsan it must be in a dry state and free from atmospheric influences, just as we find it on sale in the open market.

In order to demonstrate the ease with which this product changes, the follow-

ing experiments were conducted under conditions that would obtain in a well-regulated laboratory or dispensing pharmacy.

A five percent solution was made, using ammonia free water, recently distilled. Four cc. of this fresh solution was placed in a tube and immediately corked. Another four cc. was placed in a similar tube but was not corked. The experiments were instituted at 3 p. m., December 3, 1912. The results obtained were as follows:

Closed Tube.—December 4, 1912, 12 noon (21 hours after preparation), a slight decomposition at the surface of the solution. The color is a light brown. The color occupies mostly the surface of the solution. No sediment. Slight suspended precipitate.

Open Tube.—December 4, 1912, 12 noon (21 hours after preparation), a decided decomposition at the surface of the solution. The color is a dark brown. About one-third of the volume of solution appears to be so colored. No apparent sediment but considerable flocculent particles in suspension.

Observations of December 6, 1912, three days after preparation, time 3 p. m.:

Closed tube reveals a deep brown colored solution, the color spreading throughout the solution. A slight sediment is observed.

Open tube shows a dark, brownish-black solution. The color is decidedly diffused throughout the solution, with a heavy sediment.

From this we are to infer that within 24 hours solutions of Neo-Salvarsan become absolutely unfit for use. As yet, no suitable chemical means has been found by which this decomposition can be retarded or detected in its early stages. In the case of the crystals the author has found that the microscope offers the best means by which this change can be detected far in advance of eye or reagent. The unaided eye detects the change after a danger point has been reached, while chemical reagents are of no avail. By virtue of the microscope, each crystal can be seen to gradually change in color, from that of its original yellow to that of a light brown and later on a dark brown, when under exposure. One of the injunctions given by the producers of Neo-Salvarsan is that it must not be used if it shows any signs of discoloration, and if once exposed be used up at once or before discoloration. Unused amounts should be rejected.

Fresh Neo-Salvarsan under the microscope presents a picture of oddly shaped, greenish-yellow crystals, in variable sizes, narrow and long and of a tubular appearance, resembling in some respects, small, narrow, and short, waxy or fibrinous renal casts. In nature they are waxy like, and glossy, and tend to transform into yellowish oil-like globules if kept for any length of time in a warm place and free from the air. This was quite noticeable with those mounted in water free cedar oil, under cover glasses on glass slides. In this manner I have kept crystals for several months without suffering much alteration other than a coloration of those near the edge of the cover glass where air was most likely to enter. The coloration which ensued in such an event was slow in forming and of a light brown color. In the case of decomposed crystals—plain or in solution—the microscope revealed the same to be of a deep, dark yellow to brown color, the depth of color depending largely upon the extent of the decomposition, the age of the preparation and the length of time exposed to external influences.

The dark colored sediment produced by prolonged oxidation of Neo-Salvarsan

in solution, is of a brownish-black color and granular. While under the microscope it appears to be lighter in color, and has the appearance of amorphous powder, that is, it is devoid of definite crystallization, other than that as observed later on. These formations are not all alike, since some are found to be more granular or flaky than others.

Decomposed solutions of Neo-Salvarsan all have a scum on the surface of the fluid which reveals a metallic lustre. The sediments as found in the above experiments when placed on a slide and studied by the microscope, in a dried condition, showed the presence of numerous well formed octahedral crystals of As_2O_3 , which responded to all of the tests for arsenic. The sediment itself if heated in a closed tube gave the characteristic arsenic ring formation at the cool portion of the tube, with the formation of the typical crystals. These in turn were made to respond to other tests for arsenic.

The conclusion reached in the foregoing study is that Neo-Salvarsan begins to suffer a change immediately after it becomes exposed to the action of the atmosphere.

That the change is a gradual one of oxidation.

That toxic symptoms may develop as a result of this obscure decomposition—when used—long before any change can be detected by the unaided eye.

That the toxic element produced in consequence of this decomposition is mainly arsenic trioxid.

That the degree of toxicity depends entirely upon the amount of free arsenic trioxide present.

AN ANCIENT PATENT MEDICINE AD.

The patent medicine craze had a firm hold on its victims way back in Queen Anne's time. In the current *Atlantic* the following advertisement is reprinted from Addison's Spectator: "A Treatise of the Hypochondriack and Hysterick Passions vulgarly called the HYPO in Men and VAPOURS in Women" was advertised, as well as many nostrums of which the following is a typical notice:

The Vapour in women infallibly Cured in an Instant, so as never to return again, by an admirable Chymical Secret, a few drops of which takes off a Fit in a Moment, dispels Sadness, clears the Head, takes away all Swimming, Giddiness, Dimness of Sight, Flushings in the Face, &c., to a Miracle, and most certainly prevents the Vapours returning again; for by Rooting out the very Cause it perfectly Cures as Hundreds have experienced: It . . . causes Liveliness and settled Health. Is sold only at Mrs. Osborn's Toy-shop, at the Rose and Crown under St. Dustan's Church in Fleet-street, at 2s. 6d. the Bottle, with directions.—*The Atlantic*.

Section on Commercial Interests

Papers Presented at the Sixty-First Annual Convention

CAUSES CONTRIBUTING SUCCESS OR FAILURE IN PHARMACY.

CLEMENT B. LOWE, PH. B., M. D., PHILADELPHIA.

It may be of some value to some future pharmacist if I should sketch out the conditions which make for success or failure in pharmacy. First let us consider those which influence success.

A Good Physique.—It goes almost without saying that one intending to take up pharmacy should have a sound physique, as it can scarcely be claimed that the long hours and close attention to business demanded of the busy pharmacist are conducive to health. It is not the smell of drugs that is prejudicial to health, as we are so often told, but the deficiency in oxygen through poorly ventilated stores. Of course this can be remedied to a considerable extent by careful attention to ventilation, especially during sleeping hours when plenty of oxygen should be secured, with but little draft. In the writer's opinion, some daily systematic outdoor exercise would be invaluable to many pharmacists. For this reason having store and residence in the same building is objectionable.

One pharmacist, known to me, who is over sixty years of age, walks five miles daily in going to and from his meals. Unfortunately there are other pharmacists who have been so long immured in their pharmaceutical cells that it seems almost impossible to overcome the inertia which chains them to their stores.

General Education.—Granted a good physique, one should also have a fair mental development, in fact the laws of some of our states demand it as a *sine qua non* to the study of pharmacy. While the amount of general education demanded of the embryo pharmacist is not yet large, it would be a great gain to him if he could be made to see that a still greater amount of education would open many doors of literature and science through which it would be both a pleasure and profit to enter.

Pharmaceutical Training.—Granted a good physique and a fair education, the next most important thing is the pharmaceutical training. In many cases the young man does not have much choice as to where he will secure his pharmaceutical training, he must take what he can get in his home town. If this is so in a small town, it need not be so in a large city where there are stores that have had an enviable reputation for years in turning out excellent pharmacists, the very fact of having been trained in such a store will at once secure a profitable situation.

Pharmaceutical Education.—It is our impression that young men frequently go to college too soon, frequently before they have acquired sufficient pharmaceutical experience, or an extensive enough vocabulary to understand many of the

things which it is tried to teach them; that this is so has been demonstrated by tests applied at different times to students.

Pharmacy is hedged about by so many laws that one hesitates to recommend additional ones, but it is our experience that a two years' pharmaceutical experience had best be had before entering a college of pharmacy. It is past our comprehension how a student without any experience can profit as he should by a pharmaceutical course, in fact the writer knows that some do not, but go limping throughout the course.

The College to Attend.—It would be treading upon dangerous ground to indicate the college of pharmacy that a student should attend. This much, however, may be admissible. According to the old adage, "you judge of a man by the company he keeps," so you can judge of the character of an institution by the character of the men that it sends out.

Clerking or Going into Business.—One can not lay down absolute rules about the matter, whether it is wiser for a clerk to endure the ills he knows of, or fly to those he knows not of and by plunging into business attempt to end them. That a clerk may save money without going into business is quite possible; the writer knows of a clerk, (unmarried, however) who has had a good situation for years, who through saving and wise investments has accumulated nearly \$10,000, but he still clerks. One of the chief impelling causes of the young pharmacist rushing into business is his desire to get married, he has the marriage fever so badly that nothing that can be said to him will alter his mind, he has to be allowed to make his plunge into the sea of matrimony.

Location.—An important question is, where shall the young pharmacist that is going into business, locate. Too many graduates both of pharmaceutical and medical colleges locate in the city of their graduation and crowd the ranks already full to overflowing. There are localities especially in some of our newer states where their services would be in much greater demand. It is our opinion that the country town frequently offers superior opportunities to a well equipped graduate. If well trained in chemistry and bacteriology a business might be built up that would speedily bring both fame and fortune.

Adaptation to the Business—The Locality.—The character of the business will depend to some extent on the environment, but to a still greater degree on the pharmacist's own efforts. Some prosperous pharmacists in country towns make little effort to attract prescription business, they claim that commercial pharmacy is much more profitable, and that the time spent in putting up a fifty cent prescription would bring in several dollars in some other department. The writer knows of one pharmacist who nearly controls the sale of paris green in his county, all the granges buy of him, his annual sales amounting to quite a number of tons. But even to a commercial pharmacist a chemical education would be of much value, he could determine for himself the percent of arsenic in Paris green, and the strength of many other chemicals and preparations the sale of which depends upon quality.

Our position has always been, that if a graduate of pharmacy does not care to run his business along pharmaceutical lines, he has wasted time in his apprenticeship and pharmaceutical education, he had better have taken a short cut to a department store. At the present time, many of the so-called drug stores are

such only in name, they could not maintain themselves a week on their drug business.

The time seems to be rapidly approaching when there will be a complete differentiation between the commercial and the ethical pharmacy, the latter will have complete outfits for making chemical, urinary and bacteriological examinations.

Parenthetically it might be said, that we have somewhat wondered, what the effect of the increased medical requirements will have upon the medical practitioner of the future. A young man who has to spend ten years of his life in acquiring a collegiate and medical education can not afford to practice medicine at the prices formerly in vogue; neither will he have the time to do so, as the accurate physical examinations which the advanced physician will be required to make, will consume much time. One of these up to date physicians said to me that he could only examine half a dozen patients of a morning. The question naturally arises who will look after the respectable poor, will they be turned over to the tender mercies of the dispensary, or will they receive their medical aid from the family druggist?

Character.—Of all the essentials to success, probably the most important is character. A pleasing personality is of great value, but a character for probity is worth more. It must, however, be real; it cannot be assumed. It is related that a customer objected to the price which his druggist (a man of fine business reputation) wanted to charge him, saying that he could buy the article twenty cents cheaper down the street. The druggist said, why didn't you buy it there? The customer replied I would rather buy it of you, then the druggist said, "that *rather* will cost you just twenty cents."

We have thus far tried to sketch the causes underlying success in pharmacy, now we would briefly enumerate those tending to failure.

Poor Health.—The writer has frequently seen young men enter the drug business whom he knew would be forced out of it in a few years by the condition of their health.

Deficient Education.—This is not as frequent a cause at the present time as was the case some years ago, owing to the requirements of both state and pharmacy boards. However, a young man, if aware of his deficiencies, can afterwards make good by study and application. The writer knows of a graduate of pharmacy of some twenty years standing whose preliminary education, through lack of opportunity was quite meagre, who got through a college of pharmacy with difficulty, but since by his own efforts, aided by a well educated wife, has made a great success.

Poor Pharmaceutical Training.—The writer considers a good pharmaceutical training of so much importance that he pities the young man who makes dollars and cents the controlling factor in taking a position.

Second-Rate Colleges of Pharmacy.—Many a young man in selecting a college of pharmacy at which to acquire his education, makes but little effort to ascertain the best one, but is influenced largely by convenience and cheapness. The writer knows of a college of pharmacy that advertises a microscopical department where not a member of a recent graduating class had the chance to see through a microscope. Hardly second to the choice of a college is the question, what will the student get out of his college course; will he acquire barely sufficient to secure his

diploma and pass the state board, or will he secure a maximum of knowledge that will go a long way to making his future a success.

Insufficient Capital.—Insufficient capital, caused by undue haste to go into business, is frequently a cause of failure.

Fifty years ago a cash capital of \$500.00 and good credit were often sufficient for a start in business. At the present time, ten times \$500.00 is barely sufficient. The elaborate manner of fitting up stores, the varied stocks and cash payments, all call for greatly increased capital.

Poor Location.—Stores are frequently started, especially in cities, where there is no chance for success. Inducements are often made by operation builders to druggists to start stores where they are not needed and must come into competition with older and better equipped stores, and hence are doomed to failure or a pitiful existence. I have been told that half the retail drug stores of Philadelphia are mortgaged to the wholesale houses.

Not infrequently a young man who has clerked in a prosperous store for some years, overestimates his popularity and starts in business, as near the old stand as possible. As he tries to outshine the old store, his expenses are frequently greater and his business less, so that his profits may not equal his salary as a clerk, plus all the responsibility of the business.

Undue Competition.—We often hear it stated that competition is the life of trade, but it is quite as likely to be its death. A pharmacist who complies with the law has the legal right to open a store where he may choose, but it is another question whether he has the moral right to start a new store that he knows will seriously injure one long established. If taken to task about it, he would no doubt say like Cain, "am I my brother's keeper?"

New stores are not infrequently started, given a false boom through cut prices and fictitious sales, and are then unloaded upon some innocent victim.

Rapid Success is sometimes perilous, unless one has a well ballasted character. The writer knows of a young man of exceptional ability and address, who bought out a store in a wealthy city suburb. He quickly attracted a most profitable custom, but unfortunately became too intimate with some of the idle rich young men who frequented his store and was eventually sold out by the sheriff.

To sum up, the following conditions lead to success, viz.:

Good health, education, pharmaceutical training, pharmaceutical education, wise choice of a college of pharmacy, care upon going into business, a wise adaptation of the business to the locality where located and last but not least, a good character.

The following conditions tend to failure, viz.:

Poor health, deficient education, poor pharmaceutical training, unwise selection of a college of pharmacy, insufficient capital, a poor location, undue competition, too rapid success.

If the presentation of these pharmaceutical pros and cons shall influence favorably some young man's life, the purpose of the author in writing this paper will have been accomplished.

Section on Historical Pharmacy

Papers Presented at the Sixty-First Annual Convention

THE CENTENARY OF THE DISCOVERY OF IODINE.

OTTO RAUBENHEIMER, PH. G., BROOKLYN, N. Y.

In the beginning of the nineteenth century great changes took place all over Europe through Napoleon, the military Corsican, until he and his great army met their defeats at Moscow in 1812, at Leipsic, in 1813, and at Waterloo, in 1815. At the same time there was also a revolution in science going on, quite especially in chemistry. Since Anton Laurent Lavoisier (1743-1794) succeeded in abolishing all prejudices and in a masterly manner applied scientific principles to the explanation of chemical processes, a new clear way was opened to chemistry, and important fundamental principles and doctrines and a new chemical nomenclature were adopted.

In 1803 John Dalton (1766-1844), the noted physicist, gave the results of his researches, which lead to the foundation of the Atomic Theory, which was explained in his book, "New System of Chemical Philosophy," published in 1808. Dalton most certainly laid the cornerstone for a new theoretical chemistry. Three distinguished chemists born about the same year, a true triumvirate, namely, Berzelius, Davy and Gay-Lussac, representatives of three countries, Swenden, England and France, were especially instrumental in the construction of the "new chemistry." For this reason I beg to dwell upon these three men for one minute, in as much as this gradually leads up to the discovery of the elementary nature of iodine.

Baron Jons Jakob Berzelius (1779-1848) was one of the recognized authorities in chemistry. I want to emphasize the fact that Berzelius from 1802 was assistant, and from 1807, professor of medicine and pharmacy at the University of Stockholm, and pharmacy can be justly proud of having such an authority as one of its teachers. I can, however, not subscribe to the statement by T. P. Hilditch in "A Concise History of Chemistry," 1911, page 214, that Berzelius was a Swedish apothecary. The entire energy of Berzelius became devoted to one great aim, namely the minute investigation of chemical properties and the development of the atomic doctrine.

Sir Humphry Davy (1778-1829) served his apprenticeship with a certain Mr. Borlase, an apothecary of Penzance in Cornwall, but later studied physics and became professor at the Royal Institution in London. He first became prominent through the discovery of the intoxicating and stupefying properties of "laughing gas," our nitrous oxide. During the first thirteen years of the nineteenth century he accomplished his most memorable work, which effected a complete transformation in many branches of chemistry by the isolation of metals, that is the ele-

ments of the alkalies and the alkaline earths, by the galvanic current. An even still more important result was the discovery of the elementary nature of chlorine. It was Sir Humphry Davy who said: "Analogy is the fruitful parent of error."

Joseph Louis Gay-Lussac (1778-1850) was initiated into chemistry by the immortal Claude Louis Berthollet, the discoverer of potassium chlorate. Gay-Lussac became professor of chemistry at the École Polytechnique and professor of physics at the Sorbonne. As it is well known he was the discoverer of the so called "Law of Volumes," which proves the existence of a definite relation between the volume of a gas and its temperature. Gay-Lussac was assisted by Louis Jacques Thénard (1777-1857) professor of chemistry at the Collège de France, whose name is inscribed in the annals of chemistry and pharmacy as the discoverer of hydrogen peroxide.

At the time when Davy, Gay-Lussac and Thénard began their memorable investigations, hydrochloride acid gas was generally held to contain chemically combined water. The great Lavoisier was under the impression that it contained oxygen, and therefore gave it the name "Acidum Muriaticum," derived from "Muria," the Greek for saltwater, or seawater.

In 1810 Humphry Davy announced the epoch-making discovery that hydrochloric acid was a simple, indivisible chemical, containing no oxygen.

Many distinguished chemists at that time regarded chlorine as the oxide of a hypothetical element. Berthollet therefore in 1785 named chlorine "oxy-muriatic acid," which succeeded the name "dephlogisticated marine acid," given by Scheele.

Again Davy was the first to express the distinct opinion that chlorine was an element and suggested for it its present name in "Philosophical Transactions" for 1811, page 1. At first Gay-Lussac and Thénard did not want to agree to this, not wanting to disturb the chemical system of that time. It was the discovery of the elementary nature of iodine and its analogy to chlorine which proved the correctness of Davy's views.

The Discovery of Iodine.—Unlike the French apothecary, Antoine Jerome Balard, who discovered bromine in 1826 and whose memorial tablet is the first medallion which adorns the facade of the École Supérieure de Pharmacie in Paris, another French pharmacist, Bernard Courtois, who discovered iodine in 1811, is not honored, in fact is almost forgotten, or is only too frequently mentioned in a disrespectful manner as a soap maker or soda manufacturer, or as a *salpêtrier*.

It should be remembered that in those times of war when almost as much gunpowder was used as there was bread consumed, saltpeter became very scarce. As early as 1540 an edict was issued in France commissioning officials named "Salpêtriers," who were authorized to seek for saltpeter in stables, cellars and other places where it was found naturally. La Salpêtrière in Paris, the jail and insane asylum, became famous as one of the natural nitre factories in the world. It might also be of interest to the A. Ph. A. members assembled at Nashville, that the nearby celebrated Mammoth Cave in Kentucky does, or rather used to contain natural deposits of saltpeter, which were used in the manufacture of gun powder during the war, just about a century ago.

Bernard Courtois, the discoverer of iodine, was a pharmacist. He was born in Dijon in 1777 and at an early age he became apprenticed to the apothecary, Frémy, at Auxerre, the grandfather of the celebrated chemist, Edm. Francois

Frémy, whose name is intimately associated with the preparation of anhydrous hydrofluoric acid in 1869 and the fluorination substitution process. Later young Frémy and Courtois worked together in the laboratory of the celebrated Antoine François Fourcroy (1755-1809) professor of chemistry at the Jardin du Roi, another descendant of pharmacy, his father being the apothecary to the household of the Duke of Orleans. Other assistants of Fourcroy were Thénard, mentioned above, Armand S. Seguin (1765-1835) who as early as 1795 recognized that tannic acid was different from gallic acid, and Louis Nicolas Vauquelin, (1763-1829) another authority whose cradle stood in an apothecary shop in Normandy. Courtois also became assistant to Louis Jacques Thénard, who had studied pharmacy and chemistry under the celebrated Berthollet, Fourcroy and Vauquelin, and who became professor of chemistry at the École Polytechnique and at the Collège de France, and who was made a Peer of France in 1832 by King Charles X.

Armand S. Seguin, the former demonstrator under Fourcroy became immensely wealthy through the supply of drugs to the army during the republic, the empire and the restoration. Courtois was employed in the laboratory of the banker-chemist at Jouy en Josas, and was helpful in the isolation of a crystalline substance, having an alkaline reaction, from opium. Seguin brought his researches before the Institute de France on December 24, 1804, in a paper "Sur l'Opium," which paper, however, was not published until 1814 in the *Annales de Chimie*, Vol. 92, page 225. He came very near getting the Montyon prize of 2000 francs, which was captured by the German apothecary, Friedrich Wilhelm Adam Ser-türner "because he was the first to recognize the basic character of morphine and has thus opened the way for future discoveries in pharmacy, chemistry and medicine." It must be mentioned that such an authority as Vauquelin gave credit to Courtois for the discovery of morphine in 1804.

Discovery of Iodine.—The foregoing proves that Courtois was well fitted to become a research chemist equally as renowned as his eminent teachers. But he became commercialized and took up technical chemistry for a livelihood and in 1804 began the manufacture of artificial saltpeter in the Rue du Rigard in Paris. He employed the ashes of sea weed, called "varec" in French and "kelp" in English, to prepare a lye, which, of course, contained principally sodium carbonate. This was decomposed with nitrate of lime, which formed a solution of sodium nitrate and the precipitate of calcium carbonate. When Courtois used this method in a copper boiler, he discovered that the solution attacked the metal. He at first suspected that the cause of this trouble lay in a poor quality of varec, but after numerous experiments he found that the ashes of all sea weeds had the same deteriorating effect. Courtois furthermore discovered that after the crystallization of soda from the lye of varec, the remaining mother liquor when accidentally heated with sulphuric acid evolved beautiful violet vapors, which sublimed into scales having a grayish-black color and a bright metallic lustre. It was Courtois who discovered that when this substance was treated with ammonia an explosive compound was formed, and it was Courtois who recognized the corrosive action of the scales upon organic matter.

As usual, commercial or industrial chemists are too busy for further and deeper researches. Courtois had to make saltpeter and had no time to investigate the

violet vapors or the metallic scales. However, he communicated his experiments to his friend Clément, a chemist, who presented a report of these interesting experiments to the Academy of Sciences at Paris on November 20, 1813, one hundred years ago, and eighteen months after Courtois discovered the new substance.

It might be of historical interest, especially to pharmacists, that Charles Bernard Désormes and his son-in-law, Clément, whose first name, however, is not recorded in any of the numerous works which have been consulted by the author, operated an alum factory at Verberie. The names of Clément and Désormes are perhaps best known through their thorough investigation of carbon disulphide and their splendid pioneer work in thermo-chemistry.

Discovery of the Elementary Nature of Iodine.—Sir Humphry Davy, the "traveling chemist," on his way to Italy, by special invitation of Emperor Napoleon, stopped over in Paris and was present at the reading of this paper by Clément. Up to that time no suggestion was made either by Courtois or Clément of the elementary nature of this substance. Clément gave the English chemist some of the crystals and asked him to further investigate them. Sir Humphry Davy, who in 1811 had discovered that chlorine was an element, suspected the very same thing of this substance and commenced experiments at once which convinced him of the truth of this surmise.

However, Gay-Lussac, the French chemist, got ahead of the slower English authority by presenting the very same facts in a paper which he read at the Academy of Sciences on December 6, 1813. Five days after the reading of this paper, Sir Humphry Davy, complained of this trick played by the French chemist, in a letter to Mons. le Chevalier George Leopold Cuvier, the Commissioner of Education, making the claim of priority. The matter was referred to Ferdinand Hoefer, the great French historian, who thoroughly investigated the circumstances, and thereupon announced that Sir Humphry Davy was entitled to the discovery of the elementary nature of iodine. Even the French historian Raoul Jagnaux in his *Histoire de la Chimie*, I, pp. 522-524, who quotes the pharmacist-chemist Wurtz on the title page:

"La chimie est une science française

Elle fut constituée par Lavoisier d'immortelle mémoire."

(Chemistry is a French Science which Lavoisier made immortal), gives credit to Sir Humphry Davy as the first to recognize the elementary nature of iodine. It is therefore surprising that most of the books give this credit to Gay-Lussac, whose name has been made immortal by his classic "*Mémoires d'Iode*," published in 1814.

Etymology of the word Iodine.—Sir Humphry Davy named the substance "Violaceous Gas," on account of the color of the vapor. From the Greek "*iodes*," that is violet-colored, Gay-Lussac named the element "Iode" in French, from which the Latin "Iodum," the German "Jod" and the English "Iodine" are derived. Therefore Gay-Lussac deserves credit for the proper name of this element. The Greek "Ion" for "violet" was originally "Fion," from which the Latin "Viola," and the German, English and French "Violet" are derived.

Introduction of Iodine in Therapeutics.—Jean Francois Coindet (1774-1834), the founder of a generation of physicians, studied in Edinburgh and became one

of the best known physicians of his time, settling in Geneva, Switzerland. Spongia Usta, or burned sponge, was largely used at that time against scrofula and goiter and Coindet suspected that iodine was its active constituent, the same as in sea weed, which was verified by Jean Baptiste Dumas (1800-1884), the celebrated pharmacist-chemist of Geneva and Paris. Coindet thereupon promptly introduced iodine and preparations of iodine into therapy for the same purpose with great success. J. G. A. L. Lugol (1786-1851), the celebrated physician at the Hospital Saint Louis in Paris, was also instrumental in introducing iodine into therapy and his name will live forever in pharmacy and medicine on account of Lugol's solution.

Rewards.—In the case of iodine, science has been thankful to the pharmacist who discovered the substance, and also to the physician who introduced it into medicine. In 1832 the Academy of Science in Paris awarded 6000 francs to Bernard Courtois, who had been ruined financially in 1815 by the competition of natural, duty-free saltpeter from Chili with artificial saltpeter, or sodium nitrate, which he was manufacturing. However Courtois became a spendthrift and died in poverty in Paris in 1838.

The Academy of Science also awarded a prize of 3000 francs to Coindet, the physician who had so promptly made medical use of the discovery of Courtois.

Conclusion.—May this story of the discovery of iodine and the determination of its elementary nature, just one hundred years ago, serve as an example of the interesting history of pharmacy and chemistry! May it arouse and strengthen the interest in the history of our noble profession and may the discoveries and work of the "fathers of pharmacy," men actively engaged in the drug business, be an everlasting credit to pharmacy!

HISTORICAL SKETCH OF THE ALBANY COLLEGE OF PHARMACY.

WILLIS G. TUCKER, M. D., AND ALFRED B. HUESTED, M. D.

The idea of organizing a school of pharmacy in Albany originated with two gentlemen interested in pharmaceutical and educational matters in the late seventies. A conference, at which several representative pharmacists were present, was held November 18, 1878, and it was decided that a meeting of the pharmacists of the city should be called for the purpose of determining whether it was advisable to form a pharmaceutical association with a view to the establishment of a school of pharmacy to be conducted by such association. A meeting was called by Dr. Willis G. Tucker, of the medical college faculty, and Mr. Gustavus Michaelis, of the Albany Pharmaceutical Company, for December 2, and at this meeting, which was held in the chemical lecture room of the medical college and attended by about twenty Albany pharmacists, a committee was appointed to prepare a plan of organization. So little interest, however, was shown in the matter that no subsequent meeting was called, nor was any further action taken to secure the organization of a school by the Albany pharmacists.

In the fall of 1880 the project was revived, and Dr. Tucker and Mr. Michaelis

consulted with Archibald McClure, Esq., a wholesale druggist and representative public-spirited citizen, Dr. Jacob S. Mosher, then registrar of the medical school and one of its professors, and Joseph W. Russell, secretary of the board of trustees of the medical school, and it was decided that a better plan of organization than that previously proposed would be to establish a department of pharmacy in Union University. Under the charter of 1873, power was given to the board of governors of Union University "to establish such departments of science and learning in, or in connection with, said (Union) university as they may deem proper." A plan of organization was drawn up by Dr. Tucker, approved by the others, and presented by them to Dr. E. N. Potter, then president of the university. He heartily approved the project and presented it to the board of governors of the university, and at the annual meeting of this board, held June 21, 1881, the Albany College of Pharmacy was created to constitute the Department of Pharmacy of Union University. A board of trustees was immediately appointed and the school incorporated as the Albany College of Pharmacy, conformably to the laws of the state, August 27, 1881.

The original board of trustees consisted of Joseph W. Russell, president; Louis Sautter, vice-president; Luther H. Tucker, treasurer; Eliphalet Nott Potter, D. D., LL. D., Jacob S. Mosher, M. D., Charles Newman, Archibald McClure, Alfred B. Husted, M. D., Edward P. Waterbury, LL. D., and Addison A. Keyes, with Dr. Willis G. Tucker as secretary *ex officio*. The board organized promptly and appointed the following faculty: Jacob S. Mosher, M. D., Professor of Botany and Materia Medica; Willis G. Tucker, M. D., Professor of Chemistry, and Gustavus Michaelis, Professor of Pharmacy. Dr. Mosher was made president and Dr. Tucker, secretary, of this faculty. A circular was promptly issued to the pharmacists in the state and neighboring territory, announcing the organization and opening of the school, permission having been obtained from the faculty of the medical college to use the lecture rooms and chemical laboratory in the college for purposes of instruction. This privilege rendered it possible for the new school to enter at once upon its work with little preparation and under most auspicious circumstances. And the school owes much of its subsequent and continuous success to the kindly and liberal co-operation of the medical school which has permitted it to carry on the larger part of its work in the medical college building. At a later date a pharmaceutical laboratory was established elsewhere, but the greater part of the work of instruction has been carried on in the medical college and this has been of inestimable value to the school.

In 1881 when the school was organized there were, according to the report of the U. S. Commissioner of Education, but 14 colleges of pharmacy in the United States with but one, in New York city, in the state, and none nearer to Albany than this old school and those in Boston, Pittsburg and Cincinnati. On the north the nearest school was at Montreal so that Albany seemed to the founders of the school an excellent location for such an institution.

The first course of lectures opened October 3, 1881, with 21 students in attendance, three of whom having attended courses elsewhere, constituted a senior class and were graduated with the degree of Ph. G., at the end of the session. These first graduates of the college were Albert R. Griffith, Gustave Kreutzer and John

S. Phillips, all of them now deceased. During the second session 32 students were in attendance and a class of ten was graduated, and during succeeding years the attendance has varied from 37 to 105. The number of graduates has been as follows: 1882, 3; 1883, 10; 1884, 13; 1885, 8; 1886, 10; 1887, 18; 1888, 11; 1889, 22; 1890, 18; 1891, 26; 1892, 22; 1893, 14; 1894, 18; 1895, 17; 1896, 16; 1897, 23; 1898, 27; 1899, 20; 1900, 31; 1901, 29; 1902, 16; 1903, 25; 1904, 21; 1905, 27, and 1906, 36.

The first secretary of the faculty was Dr. Tucker, who resigned the position in 1884, and was succeeded by Dr. Alfred B. Huested, who in 1883 had been appointed Professor of Botany and Materia Medica to fill the vacancy occasioned by the death in August of that year of Dr. Jacob S. Mosher. Dr. Mosher had been a member of the original faculty and his death was a great loss to the school in which he had from the outset taken the deepest interest and to the success of which he had in no small measure contributed. Dr. Tucker was made his successor as President of the Faculty and afterward its Dean, the designation of the presiding officer of the faculty having been changed to the latter title in conformity with the established usage in the other departments of the university. No further change occurred in the professorships until 1903 when Professor Michaelis resigned the active professorship of pharmacy and Garret V. Dillenbeck, Ph. G., was appointed Associate Professor in this department. Other additions to the teaching staff have been as follows: Frank P. Huested, Ph. G., director of the pharmaceutical laboratory, 1892; Edward J. Wheeler, A. B., instructor in chemistry, 1893; Frank Richardson, Ph. G., instructor in materia medica, 1893; Andrew MacFarlane, M. D., lecturer on microscopy; Frank Richardson, Ph. G., director of the pharmaceutical laboratory, 1895; Theodore J. Bradley, Ph. G., lecturer on pharmacy; De Baum Van Aken, Ph. G., instructor in chemistry; Thomas W. Jenkins, M. D., instructor in microscopy, 1896; De Baum Van Aken, Ph. G., lecturer on pharmacy; Theodore J. Bradley, Ph. G., instructor in chemistry, 1899; T. J. Bradley, Ph. G., lecturer on physics and pharmaceutical mathematics; G. V. Dillenbeck, Ph. G., lecturer on pharmacy; T. W. Jenkins, M. D., instructor in materia medica and pharmacognosy; Edwin C. Hutman, Ph. G., director of pharmaceutical laboratory, 1903; Arthur T. Laird, M. D., instructor in microscopy; James E. Huested, instructor in materia medica and pharmacognosy, 1904; William A. Larkin, Ph. G., instructor in physics, in 1906. In 1896, De Baum Van Aken succeeded Dr. Huested as secretary of the school, resigning the position on leaving Albany in 1901, and being succeeded by Theodore J. Bradley.

In 1883 a board of examiners, consisting of A. B. Huested, M. D., Archibald McClure and Louis Sautter, was appointed to represent the trustees in the final examination of candidates for graduation and successive members of this board, which was abolished in 1903, have been, Charles H. Gaus, Frank Richardson, De Baum Van Aken and Edwin F. Hunting. Additions to the board of trustees to fill vacancies occasioned by death or otherwise have been: John M. Bigelow, M. D., 1883; William J. Walker, 1889; Harrison E. Webster, LL.D., successor to Dr. Potter as president of the university; Donw H. Fonda, and Charles H. Gaus, 1890; Andrew V. V. Raymond, D. D., LL.D., successor to Dr. Webster as president of the university in 1896; Otto Scholz, 1897; Willis G. Tucker, M. D., 1898;

Arthur L. Andrews, 1899; Samuel B. Ward, M. D., 1903, and Edward N. McKinney, 1904.

The course of instruction at the present time covers two years as at the outset, but the sessions have been lengthened from 21 to 28 weeks and the amount of instruction by lectures, recitations and laboratory exercises has been increased over fourfold. When the school was organized its graduates were legally entitled to engage in the practice of pharmacy, but at a later date a State Board of Pharmacy was created and all graduates, or other persons, desiring to enter upon the practice of pharmacy, were required to appear before this board for examination and secure from it a license. In 1904 a law was enacted in the state which required all candidates for license appearing before the State Board of Examiners to be graduates of a college or school of pharmacy registered by the Board of Regents of the State of New York, and which requires not less than fifteen Regents' counts or their equivalent, as a condition for entrance. This law took effect January 1, 1905, and its effect has been to elevate very materially the standing of pharmacy as a profession in this state.

In 1883 an alumni association was organized, and this association has grown in strength and influence and aided very materially in promoting the work of the college and in encouraging social intercourse among its members. It holds an annual meeting on commencement day and a dinner on the evening of that day at the close of the commencement exercises. During recent years this dinner has been attended not only by the members of the association but by their friends of both sexes. The school being co-educational, and having had a number of women in its classes many of whom have taken high rank, this plan has proven very satisfactory and has done much to promote interest in the work of the association.

In 1910 the college was able to secure excellent accommodations at 43 and 45 Eagle street. These rooms were remodeled at an expense of several thousand dollars and the laboratories, pharmaceutical and microscopical, were more completely and thoroughly equipped. In 1911 the senior chemical laboratory was also accommodated in the new quarters, so that now the lectures, all of the laboratory work and exercises of the college, except the junior chemical laboratory, are held in the new quarters.

The school is now excellently and quite permanently located, in quarters well adapted for its needs, and can offer accommodations and instruction for those desiring to become graduates in pharmacy equal to the advanced requirements of the present day. Credit for the present excellent housing and equipment of the college is due to the wisdom and foresight of Theodore J. Bradley, whom we were sorry to lose, but glad to see advanced to the position of Dean of the Massachusetts College of Pharmacy. His loss has been compensated by the addition to the teaching force of Manser T. Stone and Leroy G. Mathews, graduates of a few years since, and Dr. Alfred B. Huested has again taken the position of secretary.

Papers Presented to Local Branches

THE ELEVENTH INTERNATIONAL PHARMACEUTICAL CONGRESS.*

JOSEPH P. REMINGTON, PHILADELPHIA.

On September 17, 1913, there assembled at The Hague a notable gathering of those interested in pharmacy in one or the other of its varied occupations at the Kurhaus, Scheveningen. The attendance was larger than usual and of course The Netherlands, Belgium, and nearby countries sent the largest number of delegates. The proceedings were conducted with harmony and were pervaded by a real spirit of internationalism.

A large number of papers on chemical and pharmaceutical subjects were presented, some of which were not read because of lack of time, but the range of the subjects was greater than at any previous Congress. The attendance at the lectures given by Professor Alexander Tschirch, of Berne, on the Enzymes, Professor Emile Bourquelot, of Paris, on the Synthesis of Glucosides by Ferments, and the illustrated lecture by Professor H. P. Wijsman, of Utrecht, on the Drug Cultivation of the Dutch Indies, was most notable. Professor Tschirch's paper was very interesting; he spoke in the German language and occupied nearly an hour and a half in its delivery. Professor Bourquelot's lecture was full of valuable facts derived from his researches on the Glucosides. Both of these lectures will be published soon and will be available for comment. Professor Wijsman's lecture was of a totally different character. He had visited Java and illustrated his subject by lantern slides and cinematograph. Some of the films were beautiful and the whole process of the cultivation, including the stripping, collecting, packing, and every detail was shown with the persons moving about engaged in the various details; it was most impressive and entertaining. It brought home to every hearer operations conducted in far-off countries and one could well imagine that he was on the spot and actually seeing the whole process of the cultivation of Cinchona Bark. Why can we not have in the annual meetings of the American Pharmaceutical Association such an illustrated lecture on some subject of national importance?

Space will not permit a report in detail of the individual papers, but they will be open for publication in this country and our enterprising pharmaceutical journals will doubtless reprint them.

The influence of ferments upon drugs and drug action was one of the scientific features of the Congress. Dr. W. van Dam, of Hoorne, brought up the question of the identity of chymosine with pepsin. Dr. E. Fuld, of Berlin, presented a paper on the same subject, and both reached the conclusion that chymosine and

*Read before the Philadelphia Branch, Nov. 4, 1913.

pepsin are identical. A proposition was made for the nomination of an international committee to establish an international standard and method of testing pepsin.

Professor E. Perrot presented a paper on the presence of oxydases in vegetable drugs and their influences exerted on the quality of galenical preparations. He stated that enzymes are most active agents in the vital manifestations of living plants. Animal ferments, especially the ferments of animal secretions, were subjects treated by Professor Martin Jacoby, of Berlin, and Dr. E. Gorter, of Leyden. The presence of amylax, pepsin, and tripsin in the animal secretions were specially noted in Professor Jacoby's paper, while Dr. Gorter mentioned lipase, amylase, saccharase, maltase, and lactase with proteolytic and peptolytic ferments.

It will thus be seen that the scientific pharmaceutical world is giving much attention to the action of vegetable and animal enzymes. It is evident that in the future we must look forward to revelations which will greatly affect galenical pharmacy.

In urine analysis there were two papers on the oxalic acid in the organism and the presence in the urine of calcium oxalate. Dr. Viesser advanced the proposition that oxalic acid and oxalates are products of the decomposition of the carbohydrates, mainly sugar, and a statement was made that by giving up the use of sugar in the food oxalates in the urine are reduced. Starch food does not seem to produce an excess of oxalates. Professor Rosenthaler, of Strassburg, presented an interesting paper on pyro-analytical processes. He advocated the use of sublimation upon drugs and galenical preparations with a view of recognizing certain constituents. Of course this method is not practicable on all drugs, but he believes that in many drugs not heretofore analyzed in this way the process would be found valuable.

Physiological testing, particularly for digitalis and strophanthus, was discussed and it was plainly indicated that we are earnestly endeavoring to determine reliable and accurate means of testing drugs physiologically. The discussion concluded with the adoption of the following resolution:

"The second Section of the Eleventh International Congress of Pharmacy, having heard the report of MM. Ginzberg and Meulenhoff, expresses the opinion that the principle of determining the therapeutic value of certain drugs by physiological methods should be adopted whenever the chemical test does not give sufficient indications."

While the scientific work of the Congress was being considered, in sections held simultaneously commercial pharmacy was not neglected. As the official language for most of the sections was French and most of the members spoke in that language, it was evident to delegates from other nations that the French tongue was conducive to volubility and the encouragement of the use of other parts of the body, such as the arms, and the swaying of the body to convince hearers of the value of the speaker's arguments. It was noted that in many cases the speaker failed to address the Chairman, as is the custom in English-speaking countries. There did not seem to be any necessity for members indulging in physical effort and using their biceps to enforce their views, for the French are probably the most polite people in the world; but this habit of ad-

dressing each other is not conducive to the progress of business at any congress and leads to confusion.

It was noticed that in the discussions there was evidently an intention to register objections to continued legislation to control the dispensing of medications and to evade responsibility. The writer, notwithstanding his inability to speak French fluently, sought to impress upon the section the fact that individual responsibility should not be evaded, but that it was one of the greatest assets that the pharmacist had throughout the world. The public have trust and confidence in the pharmacist's judgment and ability and are willing to pay for this. If medicine can be handed down to a customer by an uneducated boy or girl, what is the necessity for a long pharmaceutical training with individual study and the possession of a diploma?

Pharmacopœial Revision occupied much time and thought during this Congress. The establishment of a Pharmacopœial Information Bureau produced much discussion. Professor Tschirch, of Berne, wrote a paper previous to the assembling of the Congress which was widely circulated and in which he proposed that such a Bureau be established. He offered his university at Berne, Switzerland, to aid in its organization and establishment. When the subject was brought before the Congress, it was evident that there was a division of opinion. Brussels was favored by the Belgians and French as the proper place for headquarters; The Hague was also advocated because the Federation Internationale Pharmaceutique was located at this geographical point, and further the Federation had taken active steps in advancing Pharmacopœial work. The objects of an International Bureau are most praiseworthy, the intention being to select a suitable chairman who is familiar with European languages and who will send out to the commissions and committees engaged in pharmacopœial revision a summarized statement of discoveries in tests and notices of adulteration and any information which would be valuable to the pharmacopœias of the world. This will involve some expense and the money needed to carry on such an information bureau must be subscribed for or raised in order to pay the necessary expense. The subject was discussed in section meetings, but because of its importance and the necessity to find the man, the general meeting of the Congress decided to appoint the following representative committee to take the whole subject into consideration:

"The Eleventh International Congress of Pharmacy desires to see continued the work towards the unification of Pharmacopœias so happily inaugurated by the Brussels Conference for the Unification of Heroic Medicines.

"1. Considering that an International Congress is not qualified to give a pronounced opinion as to the work to be done by a similar institution, the second Section asks the general meeting to appoint a commission, to submit within two months an organization scheme to an International Pharmacopœial Bureau.

"2. The scheme elaborated by this Commission will be transmitted to the office of the International Pharmaceutical Federation, which within a month will communicate it for examination to the official Commissions of the Pharmacopœias of the different countries.

"3. The Commission to consist of the following members: Professor A. Tschirch, Vice-president for the Commission of the Swiss Pharmacopœia; Professor E. Bourquelot, member of the Commission for the French Codex; Professor H. Thoms, Berlin; Professor Jorissen, member of the Commission for the Belgian Pharmacopœia; Professor H. G. Greenish, London; Professor Joseph

P. Remington, Philadelphia, Chairman of the Committee of Revision of the United States Pharmacopœia; Professor L. van Itallie, President of the Commission for The Netherlands Pharmacopœia, and President of the International Pharmaceutical Federation."

Among the other propositions with regard to pharmacopœias was one to use Esperanto for Pharmacopœial Nomenclature throughout the world. A lively discussion ensued after the presentation by the author of the paper, M. C. Rousseau, of France. The prevailing opinion seemed to be that while it was very desirable to have an auxiliary Esperanto name, that this language had not progressed sufficiently to warrant its adoption at this time. The proposition was referred to the Federation for action.

An exhibition which was most instructive was held at the Kurhaus, Scheveningen. It was confined solely to pharmaceutical education and scientific apparatus, no proprietary specialties were shown. Photographs of pharmaceutical colleges and schools of Europe, books, and pamphlets were in evidence, and one could have spent hours at the exhibition with much benefit. Historical objects were also shown. Photographic groups of students of various European schools showed clearly that women were taking up pharmacy. The Chemist and Druggist reporter noted this fact in the following language:

"The Bureau was staffed largely by women pharmacists, the languages they spoke being indicated by tiny national flags pinned beneath the broach. The feminist movement in pharmacy in Holland is not a thing of yesterday, but has been working for quite forty years. Most of the pharmacies have women assistants and their intelligence and industry have won for them golden opinions as to the suitability of pharmacy as an employment for women."

Professor P. van der Wielen, of Amsterdam, organized a corps of women assistants who were present at all of the meetings and upon excursions. One of the delegates was informed that they were all desirous of improving their knowledge of English and hence a conversation in English ensued. That the English speaking members appreciated this desire for education goes without saying.

There were only two delegates from the United States present. President Day appointed Joseph P. Remington and Julius A. Koch to attend the Congress and on every occasion they were treated with great hospitality and were accorded every attention by President Professor Dr. L. van Itallie and General Secretary J. J. Hofman.

The entertainments were all of a most lavish and hospitable character. A pleasing fact was the cordial greeting of President Edmund White, of the Pharmaceutical Society of Great Britain to the Americans, and the two English-speaking countries were in accord on all important subjects.

On our way back to America, Professor Koch and the writer were present at the opening meeting of the School of the Pharmaceutical Society of Great Britain in London, where we assisted at the presentation of the Hanbury gold medal to Dr. Frederick A. Power, a graduate of the Philadelphia College of Pharmacy of the class of 1874.

The delegates from the American Pharmaceutical Association performed their duties in a manner which they hope is acceptable to the members of the American Pharmaceutical Association.

Contributed and Selected

THE RAPIDITY OF ELIMINATION OR DESTRUCTION OF STROPH- ANTHUS AND DIGITALIS GLUCOSIDES BY GUINEA PIGS.

CHAS. C. HASKELL, A. B., M. D.

In the summer of 1911, experiments were performed in our laboratory to determine whether ouabain showed any tendency to manifest the so-called "cumulative" action on guinea pigs. With this end in view, the minimum lethal dose of ouabain in 25 percent alcohol was determined and four pigs were given barely sub-lethal doses. These same animals were injected with varying amount of ouabain on subsequent days, after the lapse of about 24 to 48 hours. The following protocol illustrates the results secured in all instances.

Experiment I. M. L. D. Ouabain 0.00000028—0.00000030 gm. per gm. weight.

9/9/11—Black male pig, wt. 260 gm.: 0.00000029 gm. ouabain at 10:57 a. m. Almost died.
 9/12/11—Wt. 264 gm.: 0.0000002 gm. ouabain at 3:24 p. m.
 9/13/11—Wt. 242 gm.: 0.0000002 gm. ouabain at 10:57 a. m.
 9/14/11—Wt. 246 gm.: 0.0000002 gm. ouabain at 4:20 p. m.
 9/15/11—Wt. 250 gm.: 0.0000002 gm. ouabain at 4:20 p. m.
 9/16/11—Wt. 247 gm.: 0.00000027 gm. ouabain at 11:27 a. m.
 9/18/11—Wt. 256 gm.: 0.00000028 gm. ouabain at 3:58 p. m.
 9/19/11—Wt. 258 gm.: 0.00000028 gm. ouabain at 5:02 p. m.

Experiment discontinued.

It is apparent from these results that ouabain is rapidly destroyed or excreted by the guinea pig and that when twenty-four hours have elapsed a guinea pig that has previously received a large dose of ouabain is no more susceptible than is an animal that has previously received none. If, however, the second injection is made in considerable less than 24 hours after the first, the animal succumbs. This may be seen from the following experiments:

EXPERIMENT II.

Male pig. Wt. 416 gm.
 9/9/11—2:33 p. m.: 0.00000028 gm. ouabain.
 5:03 p. m.: 0.00000010 gm. ouabain.
 Died during night.

EXPERIMENT III.

Male pig. Wt. 613 gm.
 9/9/11—2:37 p. m.: 0.00000015 gm. ouabain.
 5:07 p. m.: 0.00000026 gm. ouabain.
 Died during night.

The question then arose, do the animals acquire a greater degree of resistance as a result of these sub-lethal doses? That this is not the case is shown by the following protocol:

EXPERIMENT IV.

Male pig. Wt. 439 gm.
 9/11/11—10:34 a. m.: 0.00000028 gm. ouabain.
 9/12/11—3:23 p. m.: 0.00000020 gm. ouabain.
 9/13/11—10:59 a. m.: 0.00000028 gm. ouabain.
 4:20 p. m.: Found dead.

These results are in full accordance with the experience of Vanderkleed and Pittenger.

In June, 1912, Hatcher read his excellent and comprehensive paper on "The Persistence of Action of the Digitalins," and reported that the action of ouabain showed little tendency to persist when tested on cats, but that digitalis did show such persistence. He found that some cats, after a larger, sub-lethal dose of digitalis, showed diminished resistance for as long as a month. Experiments upon rabbits showed that these animals are not rendered more susceptible to digitalis by sub-lethal doses when several hours elapse before the second injection.

In view of these results of Hatcher's, it seemed advisable to determine the behavior of guinea pigs toward digitalis; consequently, experiments similar to those already carried out with ouabain have been performed, digitalis preparations being used for the first injection, while ouabain or digitalis was used for the second injection. The results may be tabulated as follows:

Interval between Injections.	Percent of First Inj.	Aver. M. L. D. Second Inj.	Results.
1 day.....	36	80	Survived
1 day.....	55	80	Survived
2 days.....	74	74	Survived
2 days.....	92	37	Survived
3 days.....	57	86	Survived, almost died
3 days.....	86	57	Survived, very sick
1 day.....	86	74	Died (two hours)
3 days.....	84	89	Died (33 minutes)
3 days.....	84	50	Survived
4 days.....	75	75	Died (two hours and 24 minutes)
4 days.....	45	75	Died (lived more than six hours)
4 days.....	50	75	Died (lived more than two hours)
7 days.....	90	75	Died (lived more than two hours)
7 days.....	91	75	Died (2½ hours)
10 days.....	60	67	Died (45 minutes)
11 days.....	90	89*	Died (40 minutes)
11 days.....	75	89*	Died (45 minutes)
15 days.....	95	75	Survived

*Three fresh pigs injected with this same dose all survived.

No guinea pig was used for a second injection until its general condition seemed normal. In a number of instances, the weight showed a decided increase between injections, but the site of the former injection was always marked by induration or an open slough.

In a recent paper, Vanderkleed and Pittenger call attention to the fact that erroneous statements have been made concerning the cost of guinea pigs for an assay of a heart tonic by Reed's method. They state that the cost should be based, not upon the total number of animals employed, but upon the number that succumb, for it is possible to use an animal time after time until it finally succumbs.

From the results secured in our experiments, it seems that digitalis glucosides are comparatively rapidly eliminated or destroyed by guinea pigs in some instances, while in others a state of increased susceptibility is induced by large sub-lethal doses of digitalis which persists for at least eleven days and has no connection with the animal's general condition.

Therefore, the conclusion seems justified that as test animals, the use of guinea pigs which have already received an injection of digitalis is unsafe until the length of time required for complete recovery can be definitely decided. It has been my own impression (unsupported by any experimental evidence) that even after a month has elapsed, unsatisfactory results may be secured, and it has been our invariable custom to use fresh animals in the final assay of any preparation.

If uniformly satisfactory results may be obtained after a month has elapsed, it is obvious that the second use of such animals as recovered will be nearly as costly as purchasing fresh pigs, because the food and care, added to loss from natural causes, will amount to a considerable sum.

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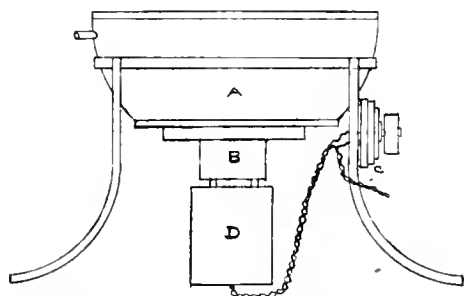
Vanderkleed and Pittenger—*Jour. Am. Phar. Assoc.*, Vol. II, No. 5, p. 558.
Hatcher—*Arch. of Int. Med.*, Vol. 10, p. 268, 1912.

DEPARTMENT OF EXPERIMENTAL MEDICINE, ELI LILLY & Co., August, 1913.

CONVENIENT ELECTRICAL WATER BATH.

JOHN W. FORBING, CREIGHTON UNIVERSITY.

An electrical steam bath filling the demand for convenience and safety, in laboratories lacking live steam and employing inflammable liquids, may be easily constructed: A 500 ampere General Electric heating unit, round and flat, is soldered into the bottom of the ordinary copper constant level water bath. The unit is connected with an attachment plug screwed into one of the legs of a tripod which may be used to support the bath. Cord and hubble attachment plug enables the user to move the bath to suit convenience. As used by the author on a 110 volt, 60 cycle alternating current, 475 watts are consumed. But three minutes are required to bring contents of bath to ebullition.



A, Water bath.
B, Electric unit.
D, Attachment plug.
C, Snap switch.

FORMATION AND DISTRIBUTION OF ODOROUS PRODUCTS IN PLANTS.*

PROFESSOR EUGENE CHARABOT, SC. D., PARIS, FRANCE.

Professor E. Charabot, Sc. D., of the Sorbonne of Paris, was presented to the large audience by Professor Samuel P. Sadtler, who in his introduction stated that the speaker by virtue of his numerous and monumental labors and contribu-

*Report of a lecture delivered before the Philadelphia College of Pharmacy, Oct. 17, 1913, and reported in English by Prof. I. V. S. Stanislaus.

tions to science, and especially his excellent work on Volatile Oils and odorous principles, is one of the world's recognized authorities.

Professor Charabot spoke in French. His eloquence held the audience for over an hour following his every word. In addressing his hearers he stated that he was proud to speak from the rostrum of America's oldest College of Pharmacy, and that he was well acquainted with the work of America's investigators of odorous bodies, to mention only Professors F. B. Powers, a graduate of this college, Edward Kremers, I. V. S. Stanislaus, Henry Kraemer, whose book on Botany is always on his desk, regretting not to have met Doctors Pancoast and Pearson, the other Philadelphians contributing to the chemistry of Volatile Oils. He wanted also to pay his deep respects to the chairman of the Pharmacopœial Committee, Professor Joseph P. Remington, and last but not least, to the Chairman of the evening, Professor Sadtler, whose many labors were well known to him.

Proceeding, Professor Charbot spoke as follows:

Among the innumerable substances elaborated in the plant organism, there are some whose physiological role is so manifestly predominant, that their study is right at the outset forced upon the attention of chemists and physiologists.

The mechanisms which govern the changes and migrations of the carbohydrates, the cooperation of these principles in the fundamental phenomena of plant life, are known in all their ramifications. And then, moreover, even though one is unacquainted with the chemical constitution of the albuminoid substances, their physiological role as well as their actions in the functions of life, have been very carefully studied, if not accurately determined.

But in addition to these bodies of foremost interest, the carbohydrates, albuminoids, and the fatty substances, there is a multitude of others whose role seems to be more in the background, but which, nevertheless, though their normal and constant presence prevents this from being suspected, should have a very well-defined significance, and perhaps even participate in an essential function. The odorous compounds are among these. Their appearance, their distribution, their evolution, their physiological role, deserve, for this reason, an impulse of scientific curiosity. This is the more so, as the perfume principles of plants adapt themselves in the most perfect way, (thanks to the precision of the methods of handling, which are suitable to them) to the study of plant chemistry in some of its relations to the action of animate matter. These considerations, of a purely philosophical order, should be in some measure sufficient to show that the question which I am going to have the honor of expounding deserves to take a place in the plan of our physiological knowledge.

Some other considerations and these are of an immediately practical kind, make of my subject a particularly interesting question. The cultivation of plants for perfume, supplies one of the most important of French industries; an industry which finds the most extraordinarily favorable conditions for plant vitality on that beautiful and smiling coast, known throughout the world under the name of "de Cote d' Azure"—(The Azure Coast).

So the subject whose concise explanation you have been pleased to honor me in asking me to present, appears to us of interest, both speculative, and at the same time, practical.

The study of the mechanisms which regulate the formation of the odorous matters and their evolution, the investigation of the relations existing between the chemical phenomena which modify these substances and the immediate manifestations of the life of the plant, the knowledge of the part played by the essential oils in the vital economy, constitute so many enticing problems which, it will be readily conceived, have a capital importance, not only from the point of view of rational cultivation and of judicious harvesting, but also from the point of view of the rational extraction of the perfume of the plant.

To this study I have devoted, either alone or in collaboration, principally with Mr. Al. Hebert, more than ten years of research work.

The question embraces: the formation and circulation of the odorous compounds; their evolution and the mechanism of this evolution; the genesis of the odorous matters and the physiological role of the perfumes.

Formation and Circulation of the Odorous Compounds.—The odoriferous plants form two very distinct groups as regards the distribution of their aromatic principles among the various organs. In some the essential oil makes its appearance in the green organs; in the others it exists exclusively in the flowers. Thus it will be necessary to consider separately the perfume in the entire plant and the perfume in the isolated flower.

The Perfume in the Entire Plant.—We have experimented with various representatives of the vegetable kingdom, belonging to different families and containing the most diversified chemical substances, and we have arrived at the following conclusions:

The odorous kinds of matter make their appearance in the young, green organs. They continue to form and accumulate until the following period, but with an activity which slackens more or less appreciably. They migrate from the leaf into the stem, and thence into the inflorescence, obeying the laws of diffusion; a portion enters into solution and, by osmosis, penetrates into the stem. On arriving in a medium already saturated with similar products, a portion is precipitated, whilst the rest, consisting of a relatively soluble mixture, continues to diffuse through the membranes and reaches the organs of consumption particularly the inflorescences.

At the time when the work of fertilization is accomplished, a certain quantity of essential oil is consumed in the inflorescence. It is possible and even probable that the green organs produce at the same time further quantities of odorous matters; experiment only permits of the determination of the fact that the difference between the production and consumption is expressed by a loss at the period when the functions of the flower are accomplished.

The practical consequence of this last conclusion is that the harvesting of the perfume-yielding plants should be effected shortly before this consumption takes place, that is, before the act of fertilization.

When this act has been accomplished, the odorous principles appear to descend again into the stem and, generally, into the organs other than the flower, a migration which is probably induced by the desiccation of the inflorescences, which involves, other things being equal, an increase in the osmotic pressure and a partial precipitation in situ of the least soluble principles.

The Perfume in the Isolated Flower.—There exist, as was supposed by J. Passy and as was proved by A. Hesse and his collaborators, two categories of plants: one class, continuing to produce odorous matters when placed under conditions such that the vital functions may still be exercised; the other class, containing the whole of their odorous principles in the free state and incapable henceforth of producing any further quantity, even though their vitality be not arrested.

Evolution of the Odorous Compounds and Its Mechanism.—These researches, which I have carried out partly in collaboration with Mr. A. Hebert, have led to the following conclusions: The compound ethers (esters) have their origin, in particularly active fashion, in the green portion of the plants, by the direct action of the acids on the alcohols previously formed. This phenomenon of esterification is assisted by a special agent playing the part of a dehydrating agent, probably an enzyme of reversible activity.

The influences which are capable of modifying the plants so as to adapt them for a more intense chlorophyllian function are favorable at the same time to esterification, because this function is favorable to the mechanical elimination of water.

Thus the chlorophyllian function tends to acquire a new significance: It not only assures the fixation by the plant tissues of carbonic acid gas, it not only effects, by favoring transpiration, the circulation of the liquids which carry and distribute the principles necessary to the mineral nutrition of the plant, but it also activates, once the carbon is assimilated, the condensations which enable the passage from a simple chemical structure to one of the innumerable complex structures, the study of which taxes all the ingenuity of the chemists.

When the alcohol is capable of readily parting with the elements of water, it gives rise, together with the compound ethers (esters) to the corresponding hydrocarbon, so that the first transformation which the alcohols undergo are due to phenomena of dehydration.

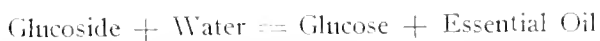
The phenomena of isomerisation, that is, changes of nature without change of composition, also proceed together with the metamorphosis of the odorous matter. Lastly the alcohols and their ethers are actively converted into their oxidation derivatives, particularly when the inflorescences appear, in which organs the fixation of oxygen by the tissues is particularly intense.

Genesis of the Odorous Matters.—The sum of my researches, and the interesting observations of M. Hesse lead to a conception of the genesis of the odorous matters in the plant. A large number of the odorous products, very diverse in their functions and chemical structure, are produced in consequence of the splitting up, with fixation of the elements of water, of principles called glucosides. It is sufficient to admit the general nature of such a mechanism to arrive at a satisfactory explanation of the facts observed with regard to the formation of the odorous matters and their appearance at any particular point of the vegetable organism.

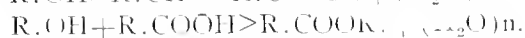
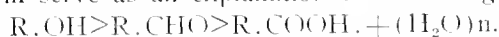
It seems to me that there is reason to believe that the glucoside which is capable of yielding the essential oil is formed or tends to be formed in the green portions. Most frequently, this glucoside immediately encounters the conditions of environment which are favorable to its decomposition, and then the essential oil appears in the green portions and begins to circulate, evolve itself and play its part. It may even happen that the medium is so favorable to the splitting up of the gluco-

side, that the latter can never be formed; in this case the whole of the essential oil will exist in the free state in the green organs.

In other cases, the glucoside only comes in contact with the ferment which is capable of splitting it, in the flower. It will then only be after it has circulated as far as the flower, undergoing in its course more or less profound modifications, that it will be able to liberate the constituents of the essential oil, and the flower alone will be odorous. It is not impossible that, in certain flowers, the medium may be so favorable to the splitting up of the glucoside, that the latter is completely split up as soon as it arrives there. The formation of further quantities of essential oil in certain flowers in proportion as the essential oil already formed is removed, would be explained by a phenomenon of chemical equilibrium. The following reaction:



would be restricted by the reverse reaction, and a state of equilibrium would be reached when the glucose and the essential oil would amount to a certain proportion. Thus the flowers in question, if left to themselves, would retain a quantity of perfume which would not increase. On the other hand, if the essential oil be removed as fast as it is formed, the decomposition of the glucoside would no longer be limited, and it would continue to take place. Consequently, the appearance of a fresh quantity of perfume in the plant whose life is prolonged whilst the odorous matter is continuously removed, follows as the result of a phenomenon of chemical equilibrium in the vegetable cell. The type reactions will serve as an explanation of the changes:



$\text{R.CHOH} > \text{R.CO.R} + (\text{H}_2\text{O})_n$ —accounting for the formation of alcohols and phenols, and their aldehyds, acids, esters and ketones, etc.

It will be understood, without it being necessary to insist on it, what advantage we have been able to derive from the practical standpoint as regards the value and the yield of perfume, from all these results obtained by scientific research.

Physiological Role of the Odorous Matter.—In collaboration with Mr. Hebert, I have proved that, contrary to what was previously believed, the odorous kinds of matter are not waste products of which the plant cannot make use. They are capable of being utilized by the plant, particularly when the latter is protected from light and no longer assimilates the carbonic acid of the air with the same intensity. They participate normally in the work of fertilization and of the formation of the seeds, in the course of which they are partially consumed."

At the conclusion of the lecture Professor Sadtler announced that Professor Stanislaus had kindly consented to render the lecture into English for the benefit of the American public.

The entire audience including Professors Lowe, Sadtler, Kraemer, Mr. Otto Kraus and others were loud in their praises of the excellence of the lecture.

PHYTOCHEMICAL NOTES.

70. *Oleoresin of Pseudotsuga taxifolia (Lam.) Britton.*

O. A. BEATH.

Acting upon the request of Acting Director Howard F. Weiss, of the Forest Products Laboratory, Assistant Forest Ranger F. W. Stabman, of the Santian National Forest, stationed at Detroit, Oregon, collected oleoresin, also twigs and cones of the "Douglas Fir." The identity of the latter was confirmed by Professor R. H. Denniston, of the Botany Department of the University. The tree is also known to botanists by the synonyms, *Pseudotsuga mucronata* (Raf.) Sudw. and *Pseudotsuga Douglasii* (Lindl.) Carr., and is commonly known as Douglas fir, red fir and Douglas spruce.¹ As a possible source of the Oregon balsam, the Douglas fir and its oleoresin are of special interest to the phytochemist as well as to the pharmaceutical and analytical chemist. As was learned after this examination had been made, the oleoresin in question had been obtained, not by puncturing the pustules but by boring into the trunk.

Setting aside about 100 grams as reserve material and as specimen, the remaining oleoresin, about 336 grams, was subjected to steam distillation, thus resolving it into its volatile oil and resin. These, together with the original oleoresin, were examined as to their physical and chemical constants. The amount of material was too small for anything more than a preliminary survey.

The oleoresin when received was not clear like that obtained from *Abies amabilis* which was examined in 1904 and 1905, respectively, by Rabak,² but had more of the emulsion-like appearance of ordinary turpentine, though decidedly liquid like the balsams. However, attempts to separate water by dissolving the oleoresin in chloroform or by distilling with xylene gave negative results. After standing for several months, however, it became perfectly clear, a slight white sediment having been deposited.

Frankforter states that "Fir pitch as it runs from the trees is a perfectly clear liquid. * * * Usually it is water-white and quite mobile. On exposure to the air it changes its color and slowly becomes viscous."³

The angle of rotation of a 20 percent alcoholic solution was determined in both a 100 mm. and in 200 mm. tube and in each case the specific angle of rotation was computed to be $+1.48^\circ$.

One gram of oleoresin, dissolved in 10 cc. of perfectly neutral alcohol and titrated with standardized alcoholic potassa, gave an acid value of 100.5. Heated for an hour on a water bath with an excess of alcoholic potassa, and titrated back, the saponification number was found to be 102.0. Duplicate determinations were made in both cases.

Of volatile oil, 51.5 grams or about 15 percent were obtained. Its specific

¹ A detailed synonymy, quoted from Sargent's *Sylva*, will be found in Brandel and Sweet's article in the *Ph. Rev.*, 26, p. 326. See also Rabak, *Ph. Rev.*, 22, p. 297.

² *Ph. Rev.*, 22, p. 293; also 23, p. 46.

gravity at 15° was 0.8705; its angle of rotation in a 100 mm. tube -46.46° , hence $[\alpha]_D = -46.47^\circ$.

When freshly distilled the oil had an agreeable terebinthinate, slightly camphoraceous odor. Five cc. yielded about 0.2 grams of a nitrosochloride, presumably pinene nitrosochloride. The small yield is in conformity with the high angle of rotation.

The resin obtained upon steam distillation became hard upon standing. It was clear but by no means of the light yellow color like that obtained from *Abies amabilis*.³

To determine the angle of rotation, the resin was purified by evaporating the filtered chloroform solution. In a 20 percent alcoholic solution ($d = 0.845$) it deviated the angle of polarized light 3.34° to the right, hence $[\alpha]_D = +19.6^\circ$.

The acid value of the resin was found to be 129, the saponification value 141. Duplicate determinations were made in both cases. The discrepancy between the two values as determined for the oleoresin and the resin, respectively, cannot be explained at present.

There are on record at least two earlier preliminary examinations of the volatile oil of the Douglas fir, the first by Blasdale⁴ in 1901, the other by Frankforter⁵ in 1906. The needle oil was examined by Brandel and Sweet⁶ in 1908.

The tabulation of a few of the data recorded may enable a better comparison.

	Blasdale.	Frankforter.	Beath.
Yield of oil.....	about 9 p.c.	22 p.c.	15 p.c.
Sp. gr.	0.8583 at 15°	0.8621 at 20°	0.8705 at 15°
Index of refraction.....	1.4754 at 15°	1.47299	.....
Specific rotation $[\alpha]_D$	$-41^\circ 12'$	-47.2°	-46.47°

The variations in the physical constants as recorded are such as might be expected from an oil of the same species, although differences in the specific gravity are rather large. The variation in the yield, however, is more remarkable.

Since the Douglas fir has oleoresin-bearing pustules under the bark, the oleoresin from this species has been suggested as a possible source for the Oregon balsam of commerce. Its chemical examination, therefore, is of commercial as well as of phytochemical interest. Hence a further comparison of the properties of this oleoresin with those of the oleoresin of *Abies amabilis*, another possible source of Oregon balsam, should give an added interest to the subject. For this purpose the data compiled by Rabak in the publication referred to above are utilized. Attention should, however, be once more directed to the fact that after this examination had been made it was learned that the oleoresin in question had not been obtained from the pustules but by boring into the trunk. If this method yields an oleoresin similar in appearance to Canada balsam, it becomes apparent why the Oregon balsam of commerce should be much cheaper than Canada balsam. Hence the comparison of data in the following table loses

³Comp. 1, c.

⁴Journ. Am. Chem. Soc., 23, p. 162.

⁵Ibidem, 28, p. 1467.

⁶Ph. Rev., 26, p. 326.

none of its analytical significance and interest, though phytochemically the products are not directly comparable.

OLEORESIN.							
	<i>Pseudotsuga</i> <i>taxifolia</i>	<i>Abies</i> <i>amabilis</i>	Oregon balsam, commercial				
			"1903"	"1904"	"Portland"	"Dowzard"	
Sp. Gr.....	.....	0.969	1.01	0.985	0.988	0.993	
[α] _D	+1.48°	±0°	+4° 13'	+2° 13'	+3° 5'	-3° 12'	
Acid No.....	100	44	116	103	114	.....
VOLATILE OIL.							
	<i>Pseudotsuga</i> <i>taxifolia</i>	<i>Abies</i> <i>amabilis</i>	Oregon balsam, commercial				
			"1903"	"1904"	"Portland"	"Dowzard"	
Yield	15 p.c.	40 p.c.	.....	25 p.c.	.....	.....
Sp. Gr.....	0.8705	0.852	0.857	0.882	.....	0.8652	
[α] _D	-46.47°	-12.17°	-37° 46'	-34° 37'	.....	-37° 24'	
RESIN.							
	<i>Pseudotsuga</i> <i>taxifolia</i>	<i>Abies</i> <i>amabilis</i>	Oregon balsam, commercial				
			"1903"	"1904"	"Portland"	"Dowzard"	
[α] _D	+19.6°	±0°	.....	.....	.....	.....
Acid No.....	129	70	.....	.....	.....	153	

A comparison of the above data justifies the conclusion that we are not much nearer to an understanding as to the botanical source of commercial Oregon balsam than before, except possibly in so far that one more botanical possibility seems to have been eliminated. In addition to the constants tabulated above, it should be pointed out that whereas the oleoresin of *Abies amabilis* examined closely resembled the commercial oleoresin in color and general appearance, the oleoresin from *Pseudotsuga taxifolia* was milky in appearance and in this condition could scarcely have been substituted for either Oregon or Canada balsam. However, upon prolonged standing it became clear but "water-white," not yellow as the Canada and Oregon balsams of commerce.

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On heptane from coniferous trees.
Jour. Amer. Chem. Soc., 23, p. 162.

The author found the oleoresin of *Pseudotsuga taxifolia* to yield an oil of the following nature:

Specific gravity at 15°.....	0.8583
Index of refraction at 15°.....	1.4754
Specific rotation	-41° 12'
Iodine absorption	"high"
Yield of oil.....	about 9 p.c.

- Frankforter, G. B.....1906
The pitch and the terpenes of the Norway pine and the Douglas fir.
Jour. Amer. Chem. Soc., 28, p. 1467.

The author reviews the yield of fir "pitch" from different grades of wood and outlines the physical and chemical constants of the oleoresin and volatile oil.

Oleoresin (exudation) of Douglas fir:

Specific gravity at -20°.....	0.9821
Index of refraction at 20°.....	1.51745
Optical activity	-8.82

Volatile oil of Douglas fir:

	Steam Distilled.	Destructive Distilled
Specific gravity at 20°.....	0.8621	0.8662
Boiling point.....	153.5-154°	157-160°
Index of refraction.....	1.47299	1.47246
Optical activity.....	-47.2°	-29.40°
Yield of "turpentine in fir pitch".....	22 p.c.	.....

PHYTOCHEMICAL NOTES.

So. A Crystalline Resin Acid From Pinus Sabiniana.

O. A. BEATH.

The oleoresin of Digger's pine has heretofore attracted the attention of the phytochemist because of its heptane content. If the exploiters for naval supplies in California at the time of the civil war were disappointed in finding that the so-called gum yielded no turpentine, exploiters for rosin may have been equally disappointed in finding that the oleoresin from this species, when distilled, yielded a sticky and unsightly resin or rosin. If, however, either resin or oleoresin be subjected to distillation under diminished pressure, a transparent, hard and amber-colored resin is obtained. So far as appearance is concerned this resin can readily compete with the first grades of rosin on the market.

As already indicated, the oleoresin can be used as well as the resin obtained by steam distillation of the oleoresin. Inasmuch as the resin contained chips, etc., admixtures introduced during the collecting of the oleoresin, the resin was dissolved in alcohol and the solution filtered. The resin obtained after the evaporation of the solvent was clear and hard. The oleoresin which was used in another experiment was not purified but distilled as it came from the trees. The oleoresin used in these experiments was obtained through the co-operation of Mr. Garvey Cline, Director of the Forest Products Laboratory, at Madison, Wisc.

One hundred grams of material were used in each experiment. The distillation was carried on in an ordinary round-bottom distilling flask. The distillate began to come over at a temperature of about 220°. In the case of the resin the maximum temperature was reached at 240°, while the oleoresin could be distilled to 260°, without any decomposition. The pressure in both cases was kept fairly constant at 18-20 mm.

The distillate upon cooling became very hard in both cases. That obtained from the resin was taken up with acetone and allowed to evaporate slowly. In a few days crystals were observed in the mother liquor. The supernatant liquid was removed with the aid of alcohol and the crystals were collected on a force filter. Recrystallized from acetone, the resin acid from both sources was found to melt between 152-155° C. Lack of time and the small amount of material thus far prepared have prevented an investigation of this crystalline resin acid for the present.

A word of comment concerning what some may regard as a rather queer behavior may not be out of place. Distillation of a resin or high molecular resin acid, even when conducted under diminished pressure, may be supposed to yield decomposition products rather than to change a semi-natural product that refuses to crystallize into one that will crystallize. Neither will the suggestion that fractional distillation under diminished pressure has improved the situation explain very much if one recalls the failure of attempted fractional crystallization. The explanation will have to be sought elsewhere.

The resin acids possibly find their closest analogues in organic chemistry in the so-called terpenes and related compounds. Now, it is well known to the

terpene chemist that in not a few instances the capacity for crystallization is much greater on the part of the optically inactive member of a group of optical isomers than on the part of the two optically active representatives of the same group.

In like manner the melting point of such inactive substance has frequently been found to be higher than the active components. In one instance, the writer, while working in Wallach's laboratory in Goettingen in 1889-1890, made use of these observations in the identification of an optically active substance of which but an exceedingly small amount was available. A few years later, it was observed in this laboratory that optically active resin acid from black pitch can be distilled under diminished pressure without other important change than loss of its optical activity.* Hence the distillation of the Digger's pine resin suggested itself with the results recorded above. The explanation proposed with regard to the capacity of crystallization may also throw light on the variation of the melting point observed in connection with some of the resin acids, e. g. abietic acid. A careful study of the optical activity and melting point of resin acids would therefore, seem very desirable.

The technique of resin research is not without its difficulties. Probably most of the work recorded in literature has been performed with amorphous material. Chemical literature may be overburdened but scarcely enriched by such contributions. To have been able, therefore, to cause the Digger's pine oleoresin to give up one of its constituents in crystalline form was a welcome result to one who for years had been watching solutions in various solvents with the hope that one of them might show a slight inclination to crystallize. In this particular instance the work undertaken during the past year was doubly fortunate in as much as it revealed a second method whereby a crystalline resin acid could be obtained from the Digger's pine. Again the success was due to a slight modification in the technique.

The precipitation of the resin acid as lead salt and its regeneration in the customary manner having failed to yield any crystalline products on a previous occasion, fractional precipitation was resorted to. But, as will be shown, even this precaution did not yield the desired results when the acid was regenerated according to the conventional methods.

A portion of resin from Digger's pine was dissolved in alcohol, filtered, and placed in a large wide mouthed bottle. Six fractional precipitates of the lead salt were made by adding alcoholic lead acetate. After the sixth addition of lead acetate and the removal of the corresponding precipitate no more lead salt was thrown down by the addition of lead acetate. The precipitates were thoroughly dried and the lead content of each determined as lead oxide.

	Percent as PbO	
	I	II
Precipitate No. I	4.90 p.c.	4.82 p.c.
Precipitate No. II	10.81 p.c.	10.74 p.c.
Precipitate No. III	14.55 p.c.	14.64 p.c.
Precipitate No. IV	18.45 p.c.	18.40 p.c.
Precipitate No. V	19.32 p.c.	19.28 p.c.
Precipitate No. VI	20.56 p.c.	20.51 p.c.

*Proc. Wisc. Ph. A., 13 (1892), p. 48.

The final filtrate from the lead acetate precipitates was treated as follows: additional fractional precipitates were obtained by adding aqueous lead subacetate until no further precipitate was formed. The mother liquor was set aside in a cool place and left for several weeks. Gradually a white crystalline solid was formed which deposited upon the sides of the bottle. Upon determination of the lead as oxide in the compound so formed it was found to be 53.3 p. c. PbO . This is approximately the same as the theoretical percentage of lead oxide corresponding to the lead abietate, $(\text{C}_{20}\text{H}_{27}\text{O}_2)_2 \text{PbO}$.

The lead salt obtained from the sixth precipitation with alcoholic lead acetate was used to secure a resin acid.

1. 100 grams of the lead precipitate were treated with twice the amount of sulphuric acid as ethyl sulphate necessary to precipitate the lead in the sample. The mixture was stirred and allowed to stand over night. The solution was filtered from the precipitate of lead sulphate. The filtrate upon standing did not yield any crystals, but dried to an amorphous mass.

2. An attempt to regenerate the acid by precipitating the lead as sulphide from the alcoholic mixture likewise gave only amorphous products.

3. Another 100 grams of lead precipitate were treated with a hydrochloric acid solution of alcohol. An equivalent quantity of this solution was added to the lead salt. The precipitate was filtered off and the filtrate was set aside and allowed to evaporate slowly. After about two weeks crystals were observed in the mother liquor. The syrupy liquid surrounding the crystals was removed by washing with a mixture of acetic acid and acetone. The resin acid was then purified by recrystallization from pure acetone.

The melting point was found to be between $145\text{--}150^\circ\text{C}$. after the third crystallization.

Several solvents were used for the purification of the resin acids, viz.: acetone, amyl alcohol, ethyl alcohol, methyl alcohol, ether, chloroform, ethyl acetate and acetic acid. All but the acetone proved to be unsatisfactory for the separation of the mother liquor from the resin acid.

In this case also the amount of crystalline material obtained thus far was small. Neither did the time permit of a more careful investigation at present. Hence even the question as to the identity of the two crystalline acids obtained by different methods from the same material remains unanswered. The same source, also the proximity of the melting points would seem to indicate identity. If what has been said in commenting on the fractional distillation method be borne in mind, the somewhat higher melting point of the acid obtained by the first method will be readily understood.

FROM THE LABORATORY OF EDWARD KREMERS, Madison, Wis.

THE PRACTICE OF MEDICINE IN CHINA.

J. F. RUPERT, HOSPITAL CORPS, U. S. N.

The native practitioner has learned his business by the apprentice system, mainly by his wits. Systematic education does not necessarily enter into his equipment, although the most successful may be possessed of more than the average learning. Others are the more successful for their very ignorance, as ignorance and superstition are their main stock in trade. If the practitioner belongs to the better class he will have an array of Chinese books in his office and an extensive stock of drugs, with many servants about to minister to his every wish or desire.

The richer will travel in a fine carriage, while the less favored will be satisfied with the ever available rickshaw. In the line of medicine, both internal and external, he will attempt anything, and while he may not understand the properties of his remedies, from experience he may have gained a little practical information. Chinese physicians have existed who actually used drugs scientifically, understanding their properties and watching their effects after administration. But the most of the present native physicians have learned empirically that certain drugs are good for certain ailments, and the theory of medicine is the least of their studies. That many Chinese doctors have a reputation is proved by the price charged for their visits, which in some instances in Shanghai is \$30.00 per visit. The foreign practitioner asks \$15.00 per visit (local currency).

Chinese literature contains many works on medicine and materia medica, but the best of these were written years ago and cannot be read at present except by specialists, especially foreigners who have made a special study of these old characters. Old Chinese inscriptions on rocks and statuary and porcelain and the very oldest characters are unintelligible to the present Chinese scholar.

The foreign practitioner, especially the missionary medical man, is only slowly gaining the confidence of the natives, and I would judge that the triumphs of surgery have more to do with the improvement in this matter than practice of medicine.

Chinese officials and the higher classes as a rule call in the native doctor, but often appear at hospitals for surgical treatment.

The surgery of the native doctor may be considered an absent quantity. Abscesses may be opened with their crude knives, and will be treated without any regard for asepsis or antisepsis. Ointments, blisters and poultices seem to be the limit of their treatment.

The Chinese like medicine. Pills are used most in general practice, and probably decoctions and infusions take second place. Pills are supposed to possess all or any virtue possible to be imagined and this confidence in medicine and its prescriber has much to do with the cure in most instances.

Diseases of women rarely come under the attention of the native doctor, and infectious diseases are not at all understood and can therefore be treated with no chance for success. Obstetrical work is all handled by midwives, and it may

be supposed that these also attempt advising women about their special ailments. Chinese women will readily relate all their symptoms to male doctors, but absolutely refuse to undergo examination. However, women doctors can very readily secure an examination, and also do much obstetrical work, especially at the hospitals for women.

Some of these native doctors also attempt dentistry, but the most of this work is done by native dentists with the shops along the streets, who extract teeth by tying a small strong cord about the tooth, or extract it with crude home-made forceps. These men have their little benches at certain places in the native cities or side streets of the foreign concessions, and year after year continue to do business exposed to wind and weather. That they do business is testified to in the affirmative by the great number of dirty, decayed teeth exhibited.

Vaccination according to modern methods must be taken as a great advance with the native medical man. Vaccination from arm to arm is quite general in the more enlightened districts, but the old process of inoculation, consisting of inoculating children through the nostril with powdered scabs is being slowly discarded.

Vaccination from arm to arm has been introduced since the Tai'ping rebellion, which occurred during our rebellion but lasted about twenty years. However, this work hardly comes within the scope of the Chinese doctor. The priests at the temples have monopolized this work largely, while the people themselves in their own households, or some financially minded individuals traveling with a vaccinated child will vaccinate people in wholesale lots at a most trivial price.

During the winter months, beginning about October, the priests have arranged for inoculation by having a supply of powdered scabs on hand at the temples, and at a cost of a few coppers or less will inoculate children, to be taken home and die in many instances. Of course, if the child lives, as is proved to occur frequently by the many pitted faces seen in China, the chances are very good that it will never again have the disease.

The native doctor would rather be called upon by the people for advice than to make visits. The sick may even be dragged to his home for treatment, to save expense. The Chinese are ingenious in arranging stretchers for the transportation of sick and wounded, and especially in the summer time one cannot travel far in the native cities where the missionaries have established hospitals without seeing sick being carried from place to place.

While the missionaries have been abused and maligned by many people ignorant of the facts, or prejudiced against Christianity, yet in China we see the promising results of missionary endeavor. If the missionaries did nothing more than the magnificent work, now well under way, of educating young Chinamen in modern medicine and surgery, overlooking even the work done by the missionary doctors themselves in the cure of disease and alleviation of pain and distress, the results would well repay any effort or cost expended. One is most certainly struck with a consciousness of the power of the missionary effort when he witnesses a young Chinaman, probably under twenty-five years of age, performing amputations, removing tumors and intelligently prescribing the medicines of civilization for the cure of disease. Schools have been established at many cities

in China, and Chinese graduates are being turned out each year after a five or seven-year course in modern medicine and surgery. This instruction requires a good preliminary high school education which is given in the missionary schools and universities.

At the present time I should judge that not fewer than thirty-five Chinese doctors graduate each year, and this number will rapidly increase with the extension and popularizing of the school work. These men assist the missionary physicians, take contracts with the Chinese Government in the Army or Navy, or take charge of the Provincial Hospitals which are being established by the Province Governors, which has been rendered practicable by the supplying of these Chinese physicians. Others establish dispensaries where the people can receive treatment for disease and injuries or where they can purchase good medicines of established and recognized virtue with intelligent directions.

During the outbreaks of cholera, the native men have recommended chewing copper cash pieces (coin worth about 1-20 cent gold) and I have been told the poor dying devils can be seen chewing copper until death overtakes them with broken teeth and bleeding mouth.

The popular idea that Chinese eat rats, which is false, is probably based on the fact that they use the internal organs of the rat in treatment. Various organs are supposed to possess special virtues in the cure of disease of the corresponding organs in man.

Needling is largely practiced. Inserting a long needle into the abdomen or side without any regard for asepsis whatever and with no knowledge of what organs are being pierced can be only expected to result in the death of the unfortunate upon whom the ignorance is practiced.

Plasters are used for all sorts of abrasions and skin eruptions. Whatever the property of their plaster they do possess the one virtue of sticking. As to the remedies employed I am not informed, but a black plaster is the "first thought" in Chinese first aid. If the trouble heals under the plaster, well and good. Most frequently the discharge which cannot escape sets up an extensive suppuration which is combated by more plasters and the removal of the old ones which are attached to the walls with the belief that the sore is in that way attached to the building. Or, plaster over plaster will often be applied by the most energetic until a great knob sets out from the limb. Perhaps finally the ulceration extends so widely that it becomes impossible to cover it with a plaster when, a means of escape for pus being allowed, the wound may finally heal with great scars and deformity.

Decoctions are made from vegetable drugs and taken, while the dregs are placed at the cross roads or before the house with the idea that the passer-by will unconsciously carry away the disease for which the medicine was given.

At the temples the priests also treat disease and their operations are to be recommended over the methods of the regular practitioner for the reason that a man has some chance of recovering with the priests. Prescriptions are placed in hollow rods and the rods are presented after a manner of divination. These prescriptions call for various herbs which are supplied by the priests or must be

purchased—no doubt, arrangements having been made for the universal “come-shaw.”

Drug shops are plentiful in China. A peculiar fact is that Chinese drugs are never sold in conjunction with foreign patent medicine or chemicals. The shops supplying strictly Chinese medicines stock the most peculiar and disgusting drugs. The imagination need not be stretched to comprehend the meaning of the above statement.

Stores are not so numerous selling foreign patent medicine put up in wrappers printed in Chinese. I have visited stores quite as well stocked with patent medicines and ready-put-up chemicals, etc., as are many small stores in the States. The Japanese and Americans are the leaders in the patent medicine business in China.

NANKING, CHINA, U. S. S. VILLALOBOS, September 8, 1911.

PARADOXES, SCIENTIFIC AND OTHERWISE.

France uses Celsius' thermometers, and Celsius was a Swede. The United States uses Fahrenheit's, a German. Germany uses Reaumur's, a Frenchman. Taine was a Frenchman, and the author of the leading work on English literature. Motley was an American, and author of a leading standard history of the Netherlands. Prescott, the American, is the authority on the conquest of Mexico. The Count of Paris was the first author of a good history of the Civil War. Von Holst, a German, is authority on the history of the American Constitution. Carl Schurz, a German, is the authority on the history of Henry Clay. Charles Rice, a German, was the leader of the U. S. P. revision for years in his time. And I might go on indefinitely; but, last, and not least, I quote your Otto Raubenheimer as authority on what happened at the Brussels Conference of Pharmacy. The Carmania reached the Voltorno first and saved only one. All the later arrivals saved more, knocking another old saw into a cocked hat,—“First come, first served.” Truly paradox and crossgrainedness are trumps. The word “quarter-sawed oak” is used every day. I have to find the carpenter yet who even knows what that means, let alone explaining it to the uninitiated.

Not speaking about religion, but just an every-day observation, you meet people who acclaim that they believe nothing except what they see. I just see the setting sun in the bright windows east from me. I see the sun, but the setting sun is not there. Looks as if the formula might stand modification.—*W. B. Bodemann, in The Practical Druggist.*

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

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If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

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Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co Columbus, Ohio.

WRONG CUT USED.

In the obituary notice of H. W. Carter, appearing on page 1485 of the November JOURNAL, a cut of Frank H. Carter, the well-known pharmacist of Indianapolis, was used through inadvertance.

The cut was borrowed from another drug publication, and being sent direct to the printing office, was not seen by the editor until after the JOURNAL was distributed.

We are happy to be able to say that Mr. Frank H. Carter is still in the flesh and in good health, and expects to greet his A. Ph. A. friends at the Detroit meeting next year.

<>

A DIFFERENT INSTITUTION.

Prof. Otto Raubenheimer has called the editor's attention to the fact that the institution with which he and Prof. Leon Lascoff are connected is the Department of Pharmacy of the University of the State of New Jersey, and not the New Jersey College of Pharmacy, as stated in the November JOURNAL.

The first named department of pharmacy was founded by the late Prof. Herman J. Lohmann, long an active member of the A. Ph. A., and at one time president of the New York Branch.

During the past year the college buildings have been remodeled and four new laboratories established, namely, pharmaceutical, chemical and biological laboratories, and a special laboratory for pharmaceutical research.

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GRAND EUROPEAN TOUR OF THE PHARMACISTS OF THE UNITED STATES AND CAN- ADA.

July 2 to August 24, 1914, including a visit to the most important capitals and cities of the European continent. Under the auspices of the German Apothecaries Society of the city of New York.

IMPORTANT INFORMATION, CONDITIONS AND SUGGESTIONS.

1. The pharmacists of the United States and Canada, their families, and friends, are invited to share the privilege of joining this European tour.

2. The duration of the tour from New York and return is fifty to fifty-three days.

3. The cost of the entire tour is \$270.

4. The rate of \$270 includes:

(a) A steamship ticket in the first cabin of the North German Lloyd steamship "Friederich der Grosse," sailing July 2, 1914, to Bremen. (For the very best rooms on the ship an additional charge of from \$5 to \$10 will be made.)

(b) A steamship ticket in the first cabin of the North German Lloyd steamship "Bremen," sailing August 15 from Bremen or August 16 from Boulogne sur mer to New York. (For the very best rooms on this ship, an additional charge of from \$5 to \$10 will be made.)

(c) First class hotels, three meals a day, i. e. continental breakfast, luncheon, supper. Transfers from hotels to stations and vice versa. Porterage, gratuities to servants at the hotels and restaurants, free allowance of baggage on the ocean according to the rules of the steamship company, and free transportation of two suit cases for the continental voyage from Bremen to Boulogne sur mer over the route of the itinerary.

(d) Special train of second class cars (similar to our first class travel) on the continent, from Bremen to Boulogne sur mer.

5. The rate does not include beverages, personal expenses, bath, laundry, gratuities to stewards on the ocean steamers and the railroad ticket from Paris to the ports of embarkment for the home journey, except Boulogne.

6. Membership in this tour is secured by a deposit of \$35, payable in New York funds to Mr. Robert S. Lehman, treasurer of the Pharmacists European Tour Committee, 375 Third avenue, New York City; assignments of rooms on the steamers (a most important item) will be made in the order deposits are received. The balance of the rate will be due on June 1, 1914.

IMPORTANT NOTICE.

If, for any unforeseen reason, prospective members of the tour should be prevented from sailing with the tour on July 2, all payments will be refunded to them, less \$20; but of this amount \$15 will be refunded as soon as the steamship reservation is resold (a very easy matter, on account of the departure for Europe being scheduled at the time of the very heaviest ocean steamship traffic to Europe); the remainder of \$5 will be retained by the German Apothecaries Society for proportionate share of expenses incurred by organizing the European tour.

It gives the committee pleasure to announce that at the date of issue of this circular, October 20, 1913, more than fifty pharmacists from all parts of the United

States have definitely booked as members of the American Pharmacists European tour. Steamship accommodation being assigned according to precedence in registration, the committee advises those who intend to join the tour to book at once.

It is impossible to cover in this leaflet all points regarding this tour; but all inquiries will be answered gladly and promptly by Dr. Wm. C. Alpers, 744 Marbridge Building, New York City, or any member of the European Tour Committee.

Executive Committee: Dr. W. C. Alpers, chairman European Tour Committee; Mr. Robert S. Lehman, treasurer European Tour Committee; Mr. Otto P. Gilbert, Mr. Geo. T. Riefflin, Mr. Hugo Kantrowitz, members European Tour Committee; Dr. Charles Klippert, president, ex officio; Mr. Carl Baum, secretary, ex officio.



AMERICAN DRUGGISTS' FIRE INSURANCE COMPANY MEETING.

The regular quarterly meeting of the executive board of the A. D. F. I. Company was held in Cincinnati, November 14 and 15. There were present, Messrs. Avery, Heinritz, Beal, Kauffman, Rothwell, Zwick and Freericks. Directions and preliminary arrangements were made with reference to the annual stockholders' and directors' meetings, which will take place on the tenth and eleventh of February, 1914. The board found the third quarter of the company's business to show splendid progress, and it is now certain that the business of the company for the year will be considerably in excess of \$12,000,000 of insurance written.

On the thirteenth day of September, the total business in force amounted to \$11,789,393 at a premium of \$121,253.88, of which amount there was reinsured \$939,198.50 at a premium of \$11,767.94.

The losses for the first nine months of the year amounted to \$32,557.47. The expense charged against the business of the first nine months amounted to \$31,847.39. The total income for the first nine months amounted to \$117,211.29, and the total disbursements, including bond purchases and dividends, amounted to \$125,687.51. The total U. S. and Ohio, county and municipal bonds of the company have a par value of \$309,111.14.

Of General Interest

OUR HONORARY PRESIDENT,
ALBERT BROWN LYONS,
A. M., M. D., F. R. C. S.

In this age of eugenics a biography, however brief, cannot begin with a birth, for the part that heredity plays in life may throw more light on character than all other factors together. One may find in heredity the key to action and its impulses.

In 1831 the American Board of Foreign Missions sent to the Hawaiian Islands Rev.



ALBERT BROWN LYONS.

Lorenzo Lyons, then a young man of 24. He worked as a missionary on the island Hawaii for 54 years, building during that time 14 churches and winning the devotion of the king as well as the people. He was a small man, weighing less than 110 pounds, but he had a mighty spirit and an untiring enthusiasm. When he died the king sent a Hawaiian flag in which to enshroud him, and the Sunday Schools of the island erected a monument to his memory.

Of the five children of this missionary the fourth was Albert Brown Lyons, born at Waimea, Hawaii, on April 1, 1841.

Preceding this missionary, or contemporaneous with him, were John Lyon, founder of the famous school for boys at Harrow on the Hill; Mary Lyon, founder of Holyoke College, and the first woman to find a place in the American Hall of Fame; General Nathaniel Lyon, who saved Missouri to the Union, for which he gave his life; Caleb Lyon, designer of the State seal of California, and first territorial governor of Idaho, and Hon. Wm. H. Lyon, who gained distinction by his just and efficient administration of the office of Indian Commissioner. All these were of the same family to which Dr. A. B. Lyons belongs.

His mother, whose maiden name was Smith, was a lineal descendant of John Smith who was banished from Massachusetts on account of his heterodox views, and was one of the six who accompanied Roger Williams when he sought greater freedom in Rhode Island. Among her ancestors was the Rev. Chad. Brown, first minister of the Baptist Church founded in Providence by the Roger Williams Colony, whose descendants have been prominent in the history of Rhode Island, and gave the name to Brown University.

Thus our Honorary President was born, not with a silver spoon in his mouth, but with a charge to keep, and traditions to uphold.

He received his early education in the example of a father who was not only a missionary sustained by the American Board, but was also superintendent of public schools, paymaster for the school teachers, land agent for the government, and postmaster for the town; and in the guidance of a mother who was of exceptional force of character and unusual ability.

The school privileges of Hawaii at that time were very meager. He passed through the Punahou preparatory school, then under the auspices of the American Board as a school for the children of its missionaries, and en-

tered Oahu College as a sub freshman. This college was also under the auspices of the American Board, but did not carry its students beyond the sophomore courses, being intended as a feeder for American colleges rather than as a college in itself.

So far as books were concerned, he was inadequately prepared even for that under-grade, and he found himself heavily handicapped in trying to be a real college freshman. But he had already learned the value of correct observation through his mother, who, without education herself beyond the common schools, had nevertheless a keen interest in nature and the power to arouse ambition in her son. She had stimulated him while in the preparatory school to write compositions on such subjects as "The Ocean," "The Plurality of Worlds," and the "Six Days of Creation," which later developed into his mastery of astronomy, and a general interest in nature.

Her knowledge of botany did not extend beyond the Linnean classification of plants, but she made botany to him a living and fascinating study by setting him to collecting an herbarium and writing descriptions of every plant collected. In this way he gained a practical knowledge of the local flora, although he had no means of knowing the botanical names of the several species.

A further stimulus to study he found when he entered the college in the acquaintance of Sam Armstrong who was then a freshman there and a born leader of men. Armstrong later commanded a colored regiment in the U. S. Army during the civil war, and is known to the world as the founder of Hampton Institute. Lyons found himself in the classes with Armstrong and by dint of hard digging in due time caught up with his classmates and finished the two years of college work at Oahu College.

Then in order to earn money for further education he taught for a year in the preparatory school and also served as assessor of taxes for the district of South Kohala.

Then he entered Williams College in Massachusetts and graduated in 1865 as valedictorian of his class.

The next year he spent in teaching Chemistry and Physics at Eagleswood Military Academy in Perth Amboy, N. J.

Here he made the acquaintance of a graduate of the University of Michigan, and being impressed with the fact that the University

at Ann Arbor was giving more attention to chemistry than other schools, he entered the medical course of the U. of M. as a means for continuing the study of chemistry.

Two years covered a medical course in those days, but Lyons took "everything in sight"—among the extras being a course in pharmaceutical chemistry conducted by Professor A. B. Prescott. This consisted largely of laboratory exercises, and considerable attention was paid to alkaloids,—the manufacture of morphine from opium, of quinine from cinchona, etc., being among the requirements. Thus it was under Professor Prescott that Dr. Lyons found his introduction to pharmaceutical and alkaloidal work.

Having received his M. D. degree he came to Detroit and was made assistant to Professor Duffield, who then occupied the chair of chemistry at the Detroit College of Medicine. Soon after the beginning of the term, Professor Duffield was taken with typhoid fever, and Dr. Lyons had the burden of the course for the remainder of the year. The following summer (that of 1869), Professor Duffield resigned to establish the manufacturing firm of Duffield, Parke & Co., which four years later became Parke, Davis & Co., and Dr. Lyons was made Professor of Chemistry, which position he held for twelve years.

But the salary of a professor of chemistry in a small school was not sufficient for either an adequate living or ambition, and he had already started a prescription store in connection with Dr. Andrews' office on Fort street. This business grew to considerable dimensions during the nine or ten years that he conducted it, and he then went into partnership with A. B. Stevens,—later to become Professor of Pharmacy in the University of Michigan,—on the corner of Lafayette and Shelby streets. This partnership was continued about two years, and in 1881, Dr. Lyons severed his connection with retail pharmacy and accepted a position with Parke, Davis & Co., as analytical and consulting chemist.

While with Parke, Davis & Co. he became impressed with the importance of standardization of such preparations as fluidextracts and of the alkaloidal drugs. He worked out standards for a number of drugs and their fluidextracts and the latter were placed on the market under the name of Normal Liquids, which name they held for many years. The standards which he then established some thirty years ago have remained

practically unchanged and have now received official sanction.

Dr. Lyons was the first to employ as a general assay method for the quantitative extraction of alkaloids, maceration of the powdered drug with a given volume of the appropriate solvent, in presence of ammonia, or what is now known as the aliquot method. This process he had previously applied to the commercial manufacture of cocaine from coca leaves. His work on alkaloids also led to his publishing in 1887 of the *Manual of Pharmaceutical Assaying*, which book remained for many years the standard work on its subject in the United States.

In 1887 the *Pharmaceutical Era* was started in Detroit, and Dr. Lyons became its editor. *Pharmaceutical journals* were almost a novelty in those days, and he showed his qualifications as an editor in the breadth of view which the journal displayed and in the modesty of his editorials. He associated with himself Professors Prescott and Vaughan as coeditors, and the future Professors Stevens and Ruddiman as contributors. He inaugurated a series of historical articles of more than passing interest and maintained an *Index Pharmaceuticus* which gives a comprehensive survey of the periodical pharmaceutical literature of 25 years ago.

His name appears in the *Era* as editor during four years, but in 1888 he was appointed government chemist for the Hawaiian Islands and went to Honolulu.

Here the dynamic energy and versatility of the man first displayed itself without restraint, and in addition to his duties as government chemist he took the Professorship of Chemistry in his former Alma Mater, Oahu College, and taught not only chemistry, but also physics, botany, zoology, physical geography, logic, geology and astronomy.

As Oliver Wendell Holmes puts it, he "occupied not a chair, but a whole settee." In spite of the variety and number of subjects, his was no perfunctory teaching for he made an impression on his students which is shown to this day in frequent letters and tokens of esteem. That a man could teach eight different subjects in a college and yet so impress his students that they voluntarily remember him by mail 20 to 25 years later and over thousands of intervening miles, is itself most remarkable. Few can master a whole settee so effectually.

Among his students who still correspond

with him and have since distinguished themselves are Professor Hiram Bingham, now of Yale University, who conducted the expedition for the exploration of Peru and discovered the prehistoric fortified city of the Lucas near Cuzco. Professor Bingham says: "Dr. Lyons has always had a very warm place in my heart. I shall never forget how he taught me the joys of living out of doors and of exploring. My work would never have taken such a satisfactory form and yielded as interesting results had I not had those years of early training with him."

Another student writes: "He opened my eyes to the wonder and beauty of the out of door world"; and another, "The years with him meant enrichment for life, for he opened new worlds to his pupils."

M. Castle, Jr., now Professor of English at Harvard, and C. Montague Cooke, now in charge of the government aquarium at Honolulu, were among his pupils.

His interest in geology took a practical aspect in a study of the volcanic soils of the Islands and which resulted in some important contributions to their geological history. These were reported in papers published in the *American Journal of Sciences*.

In following his zoological studies he made a collection of shells which is one of the most complete in existence, and which includes many hundreds of the peculiar tree-shells of the Islands. This collection he still holds, of course properly classified, and it is one which would grace any of the large museums. It is a most interesting exhibit, the tree-shells, particularly, being quite different from the more common sea-shells. Moreover he is an acknowledged authority on conchology.

He had on his return from the Islands a considerable collection of geological specimens, but gave the greater portion of this to the predecessors of the Detroit Museum of Art.

In botany he is an authority on ferns, being consulted frequently from various parts of the world on this subject. His general botanical knowledge is often a surprise to his friends when he identifies, as he often does, specimens found by the wayside or brought into his presence. He delights in raising some of the rarer plants about his house for decorative purposes.

Whether astronomy is responsible in any degree for his mathematical abilities the

writer does not know, but these are not the least of his talents. They count so much that when the Ninth Committee of Revision of the U. S. Pharmacopœia was organized, the Chairman declared that of its fifty members Dr. Lyons was the one man to act as Chairman of the Subcommittee on Tables.

Thus his mastery of the "settee" at Oahu is evident not only to his former students in Honolulu but to his associates here in the United States.

In 1897 he returned to Detroit, and took charge of the chemical department of Nelson Baker & Co., which position he still holds.

Dr. Lyons joined the American Pharmaceutical Association in 1885, and continued his membership during the years he spent in Hawaii. In 1887 he was elected Secretary of the Scientific Section, and again in 1897. In 1898 he was made Chairman of the Section on Education and Legislation. He has also served on the Committee on Revision of the Pharmacopœia of the Association several times, and was its Chairman in 1906-7.

In 1900 he was elected a member of the Committee of Revision of the United States Pharmacopœia, and again elected to the Ninth Revision Committee in 1910. He has done valuable work for both these committees on the Tables of the Pharmacopœia, and on its assay processes.

He has been a Fellow of the Royal Chemical Society of London for about 30 years.

In 1911 he was made an honorary member of the British Pharmaceutical Conference.

His contributions to pharmaceutical literature have been largely along the lines of alkaloidal assays and tests, and specific gravity tables. He has contributed about a dozen papers to the A. Ph. A., a number of papers to the Michigan Pharmaceutical Association, and was a contributor to the Eighth International Congress of Chemistry. Besides these, he has contributed to the pharmaceutical journals from time to time.

His Manual of Pharmaceutical Assaying was revised in 1899 and then published under the title "Practical Assaying of Drugs and Galenicals."

In 1900 he published a useful book on botanical synonyms, entitled "Plant Names, Scientific and Popular."

His most voluminous literary work has been a genealogy of the American Lyon

families, which occupied all his leisure hours for several years, and though originally intended for one volume, was finally issued about seven years ago in three volumes. Probably this work prevented the publication of more pharmaceutical papers during the years he was occupied upon it.

Dr. Lyons' extreme modesty has held him back from public prominence and has made him appear indifferent to public honors. Yet his is not the indifference of selfishness, but only a difference in estimation of values. Friendship he values highly, but flattery cannot deceive him.

Dr. Lyons was married April 25, 1878, to Miss Edith M. Eddy, a daughter of Rev. Zachary Eddy, D. D., and a direct descendant of John Alden and Miles Standish, of Mayflower fame. She also has marked literary abilities and has written both poetry and prose.

Both have been active in church work, Dr. Lyons having served as deacon in the Central Union church (undenominational), of Honolulu, and also in the First Congregational church of Detroit. The latter church recently paid him special honor in electing him life deacon.

His daughter, Miss Lucia E. Lyons, graduated from the University of Michigan in 1902 and was sent as a missionary to North China by the American Board in 1905.

She has shown a special qualification for languages, having acquired a fluent command of the Mandarin as well as the Shantung dialects. She has served in China six years, and is now at home on a furlough.

His son, Albert E. Lyons, graduated from Michigan University in 1908, having specialized in languages. He has spent three seasons traveling in France and Spain, and for three years served as instructor in French and Spanish at the University of Michigan. He is now serving as instructor in Spanish at the University of Wisconsin, where he is taking special advanced courses of study.

WILBUR L. SEVILLE.

<>

ROSTER OF SERGEANTS FIRST CLASS, U. S. ARMY.*

FORTS IN U. S.

Fort Adams, R. I..... 29 Whitmarsh, P. L.

Fort Andrews, Mass... 97 Brooks, R. R.

Fort Apache, Ariz..... 152 Ransom, L.

Fort Bliss, Texas..... 11 Hodgdon, C. B.

234 Tandrop, O. A.

*Numbers preceding names indicate relative rank.

- Fort Baker, Cal.*.....187 McKenzie, R. S.
Fort Banks, Mass...... 64 Sands, J. R.
Fort Barrancas, Fla....258 McKelvey, T.
Fort Barry, Cal...... 13 Rose, M.
Fort Bayard, N. M.
 General Hospital.... 73 Bitterman, T.
 74 Allen, U. S. G.
 104 Yeager, C. E.
 127 Tyler, B. F.
 202 Donovan, T. F.
 278 Bush, A. A.
 296 Staley, R.
Fort Canby, Wash....114 Hoberg, N. A.
Fort Casey, Wash....149 Greeno, E. O.
Fort Caswell, N. C.... 71 Lothrop, J. N.
Fort Clark, Texas....220 Lange, P. M.
Fort Constitution,
 N. H......170 Williamson, W. E.
Fort Columbia, Wash. 10 Manning, J. H.
Fort Crockett, Tex....185 Stockwell, H.
Fort Dade, Fla......236 Wineken, P. E.
Fort Des Moines, Iowa...122 Ferguson, R. S.
Fort Douglas, Utah... 57 Donnan, A. S.
 142 Cameron, R.
Fort DuPont, Del..... 15 Knapp, G.
Fort Ethan Allen, Vt. 32 MacCleary, H. R.
Fort Flagler, Wash....239 Schultz, E.
Fort George Wright,
 Wash.102 Huff, J.
Fort Greble, R. I.....203 Mathews, E. D.
Fort Hamilton, N. Y....286 Lederer, W.
Fort Hancock, N. J....101 Compton, P.
Fort Huachuca, Ariz....223 Tanner, P.
 284 Manns, G. W.
Fort Hunt, Va...... 94 Person, T.
Fort Howard, Md.....113 Pennington, S. W.
Fort Jay, N. Y...... 18 Corson, J. M.
Fort Keogh, Mont....206 Freebourn, W. J.
Fort Lawton, Wash....180 Lyda, W. K.
Fort Leavenworth,
 Kans. 81 Newport, J. F.
Fort Leavenworth,
 Prison289 Harrison, F. A.
Fort Logan, Colo..... 47 Anderson, J. B.
 165 Morehouse, A.
 259 Armstrong, E. J.
Fort Miley, Cal...... 27 Stewart, L. R.
Fort Missoula, Mont....131 Murphy, W. F.
Fort Monroe, Va.....106 Hodgins, J.
 190 Weber, H. J.
Fort Morgan, Ala.....124 Weber, E.
Fort Mott, N. J......179 Brown, J. O.
Fort Moultrie, S. C.... 61 LaMar, L. J.
Fort Myer, Va......130 Weir, S. A.
Fort Mcade, S. D.....214 Goosey, G. H.
Fort McIntosh, Tex.... 91 Dailey, J.
Fort McKinley, Me.... 80 Fitts, F. M.
Fort McDowell, Cal....126 Hamner, J. F.
 195 Bishop, W.
Fort Niagara, N. Y....120 Owen, F. S.
Fort Oglethorpe, Ga.... 16 Brower, T. E.
 267 Smith, C. P.
Fort Omaha, Nabr.... 12 Cox, S. G.
Fort Ontario, N. Y.... 89 Bice, L. R.
Fort Porter, N. Y....112 White, F. E.
Fort Reno, Okla..... 54 Vass, G. E.
 193 McEnroe, R. L.
Fort Revere, Mass....280 Praneuf, J.
Fort Riley, Kans..... 42 Hanson, B.
 78 Nudd, B. F.
 116 Gorton, G. D.
Fort Robinson, Nebr....135 Evans, W. D.
Fort Rodman, Mass....254 Luscomb, B. R.
Fort, Roots, L. H.,
 Ark. 69 MacPherson, A.
Fort Rosecrans, Cal.... 34 Donahey, W. J.
Fort, Russell, D. A.,
 Wyo.115 Jennings, H. M.
Fort Sam Houston,
 Texas 37 Curtis, H.
 63 Gerlach, J. L.
 96 Maluf, N. K.
 282 Thomson, C. L.
Fort Screven, Ga..... 56 Loebenstein, C. T.
Fort Sheridan, Ill....167 Weber, G. B.
Fort Sill, Okla.....188 Jacks, R. B.
Fort Slocum, N. Y....161 Nolan, A.
 227 Winkler, H.
Fort Stevens, Ore..... 2 Livingstone, W. C.
Fort Strong, Mass....147 Williams, F. R.
Fort Terry, N. Y..... 70 Burkard, O.
Fort Thomas, Ky....261 Shull, G. J.
Fort Totten, N. Y.... 26 Korn, A.
 111 Leedom, C. B.
Fort Wadsworth, N.Y....198 Walters, W. D.
Fort Ward, Wash.....148 Hayes, A. W.
Fort Warren, Mass....291 Mael, J. H.
Fort Washington, Md.... 38 Simmons, F. S.
 145 Sweeney, J.
Fort Williams, Me....146 Long, C. B.
Fort Winfield Scott,
 Cal. 14 Hoch, H.
Fort Wood, N. Y.....174 Duignan, J.
Fort Worden, Wash....290 Bartlett, C. R.
Fort, Wright, C. H.,
 N. Y.218 Perry, J. O.
Fort Yellowstone,
 Wyo. 86 Powell, W. N.
Fort Mackenzie, Wyo. 85 Bjork, N. J.
 287 Chase, G. P.

BARRACKS IN U. S.

<i>Columbus Barracks, O.</i>	58 Baigent, J.
	105 Maloney, P. J.
	132 Cole, E.
	199 Harp, L. D.
	253 Christensen, J.
	272 Johnson, R. V.
<i>Jackson Barracks, La.</i>	187 Greene, E. F.
<i>Jefferson Barracks,</i>	
Mo.	157 Young, G. C.
	194 Wickett, F. W.
	229 Down, E. J.
<i>Key West Barracks,</i>	
Fla.	297 Dahl, M.
<i>Madison Barracks,</i>	
N. Y.	123 Edwards, R. T.
<i>Plattsburg Barracks,</i>	
N. Y.	77 Arnold, W. E.
<i>Vancouver Barracks,</i>	
Wash.	128 England, T. M.
	143 Howard, M. S.
	191 Albertson, T. E.
<i>Washington Barracks,</i>	
D. C.	49 Roby, A. A.

ARSENALS IN U. S.

<i>Augusta, Ga.</i>	121 Neil, M.
	175 Timbrook, D.
<i>Benicia, Cal.</i>	82 Hornung, O. H.
<i>Frankfort, Pa.</i>	53 Arendt, M.
<i>Rock Island, Ill.</i>	3 Boyle, J. H.
	36 Strauss, J.
<i>Springfield, Mass.</i>	4 Looby, P.
<i>Watertown, Mass.</i>	151 Breitsprecher, A.
<i>Watercliet, N. Y.</i>	41 Gates, I. E.

ATTENDING SURGEONS' OFFICES.

<i>Chicago, Ill.</i>	140 Lyons, A. J.
<i>New York, N. Y.</i>	8 Marsden, R.
<i>San Francisco, Cal.</i>	164 Norman, A. J.
<i>Washington, D. C.</i>	182 Whitehead, J. C.

ARMY MEDICAL SCHOOL.

<i>Washington, D. C.</i>	7 Gabsch, O.
	117 Davis, H. A.
	173 Von Oehsen, H.
	211 Stimmel, C. O.
	244 Tracey, A.

DEPT. SURGEON'S OFFICES.

<i>Eastern, Governors</i>	
<i>Island, N. Y.</i>	1 Robertson, D.
<i>Western, San Fran-</i>	
<i>cisco, Cal.</i>	295 Johnson, H.

FIELD MEDICAL SUPPLY DEPOT.

<i>Washington, D. C.</i>	245 Luvé, F.
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ARMY AND NAVY GENERAL HOSPITAL.

<i>Hot Springs, Ark.</i>	33 McKenzie, G. W.
	221 Dawson, J. H.

LETTERMAN GENERAL HOSPITAL.

<i>San Francisco, Cal.</i>	20 Kincaid, K. G.
	22 Brown, C. L.
	52 Van Sickle, G. C.
	65 Bristow, T. G.
	141 Irving, R. S.
	172 Stein, L. H.

DEPOT QUARTERMASTER.

<i>Philadelphia, Pa.</i>	9 Simmel, M.
<i>Presido of San</i>	
<i>Francisco, Cal.</i>	84 Karlson, I. N.
	100 Beale, G. E.
	134 Koon, S. J.
	163 Berkowitz, A. J.
	273 Thickstum, D. W.
<i>Presido of Monterey,</i>	
<i>Cal.</i>	243 Manning, C. G.
	294 Hurley, J. J.
<i>West Point, N. Y.</i>	216 Block, H.
	248 Bonner, W. C.

WALTER REED GENERAL HOSPITAL.

<i>Takoma, D. C.</i>	28 Leonard, C. L.
	60 Thomas, F.
	79 Thuney, F. E.
	184 Anderson, C. H.
	189 Barker, Q. J.

U. S. ARMY TRANSPORTS IN COMMISSION.

<i>"Logan"</i>	67 Doran, G. C.
<i>"Kilpatrick"</i>	125 Kelly, M.
<i>"Thomas"</i>	136 Reynolds, G.
<i>"Meade"</i>	137 Weinberg, M.
<i>"Sumner"</i>	155 Hare, R. F.
<i>"Warren"</i>	203 Rand, F. A.
<i>"Sherman"</i>	267 Steiner, F.
<i>"McClellan"</i>	270 Hopkins, I. J.

ON THE BORDER OF MEXICO, ETC.

<i>Camp at Columbus,</i>	
<i>N. M.</i>	264 Hughes, F. E.
<i>Camp at Douglas, Ariz.</i>	238 Heppner, C.

WITH THE SECOND DIVISION.

<i>Texas City, Tex., and</i>	
<i>Galveston, Tex.</i>	6 Riess, H. W.
	24 Whelan, W. E.
	50 Elliott, C. S.
	83 Shaw, C. N.
	129 Hardenbrook, B.
	171 Crampton, W. E.
	262 Aldridge, C. A.
	274 Jorte, C. H.
	283 Bowers, Y. L.
	46 Meade, H.
	108 Nicodemus, F. O.
	156 Luse, W. E.
	215 Pennypacker, E. M.
	263 Simons, E. H.

MEDICAL SUPPLY DEPOT, BASE AND PORT OF
EMBARKATION.

Galveston, Texas.....169 Holland, H.

FIELD HOSPITAL NO. 3.

Texas City, Texas.....207 Aicklen, H.
251 Bednarski, A.
265 Burke, E.

AMBULANCE CO. NO. 3.

Texas City, Texas..... 35 Killikelly, H.
222 Everett, O. V.
271 Heatherly, M.
293 Wells, F. O.

STATIONED ELSEWHERE IN U. S.

Ambulance Company No. 1.

Fort D. A. Russell,
Wyo.162 Stevenson, E.
Ambulance Company No. 2.

Presido, San Fran-
cisco, Cal...... 93 Harris, S. J.
246 Dohle, M.

Field Hospital No. 1.

Fort D. A. Russell,
Wyo. 66 Collins, J. L.
99 Leiblinger, J.
150 George, W.
153 Kauffman, E. C.

Field Hospital No. 2.

Pres do, San Fran-
cisco, Cal......178 Anderson, B.
205 Barelay, H. M.
247 Dean, H. N.

On furlough, in U. S.,
unassigned213 Seith, L. F.
260 Coryell, C. W.

OUTSIDE OF U. S.

ALASKA.

Fort Davis..... 40 Walker, T. J.
Fort Egbert.....183 Davison, T. P.
Fort Liscum..... 30 Leopold, S. H.
Fort W. H. Seward... 59 Seull, J. A.
Fort St. Michaels....154 Fuller, H. N.
Fort Gibbon.....232 Kimball, C. F.
298 Murphy, W. J.
Fairbanks201 Fisher, A. G.
Nulato 62 Wood, R. A.

CHINA.

5 Senecal, H. C.
39 Hickson, J. H.

HONOLULU, HAWAII, ETC.

Fort DeRussey.....181 Donovan, D. C.
Fort Kamchameha....217 Spencer, A. C.
Fort Ruger.....158 Heazlitt, F. J.
Fort Shafter.....160 Herman, C.
231 Mims, M. D.
249 Coulman, R.
252 Goodwin, T. G.

Schofeld Barracks....226 Sykes, E. D.
237 Cook, W. H.
268 Ogle, P. L.
279 Walters, C. C.
285 Kaufer, O.

PANAMA.

Camp E. S. Otis.....299 Howson, W. S.

PORTO RICO.

San Juan.....219 Baum, F. C.

ON DUTY IN THE PHILIPPINES.

17 Walker, R. M.	19 Neville, A.
21 Douglass, G. C.	23 Byers, J. D.
25 Young, C. C.	31 Phares, W. L.
43 Sharman, H.	44 Fonteyne, G.
45 Butler, W. G.	48 Frese, O. F.
51 Graner, C.	55 Williams, T. G.
68 Behre, J. R.	72 Hicks, G. W.
75 Smelsey, S.	76 Holt, F.
87 Marcus, S.	88 Cushman, G.
90 Eiseman, F. J.	92 Keralla, J.
95 Benche, C. S.	98 Hitch, E. T.
107 Hahn, G.	109 Eble, C. F.
110 McFarland, W.	119 Dickson, R. A.
119 LaGrinder, R. A.	133 Thomas, W. H.
138 Gavagan, E. D.	139 Philipps, I. B.
144 Reiter, H. L.	159 Van Aller, A.
166 Brown, A. E.	168 Taylor, R. E.
176 Freeman, A.	177 Robinson, D. W.
192 Kennedy, R. G.	196 Lovelley, E. A. jr.
197 Rasmussen, N.	200 Linden, R. R.
204 Soekland, W. G.	208 Ehrenwerth, J. B.
209 Crawford, F. A.	210 James, E. H.
212 Lienhart, A. H.	224 Paul, G. H.
225 Clark, A. W.	228 Westra, R.
230 Elcock, W. W.	233 Hansen, M. K.
235 Kroger, H. A. R.	240 Killikelly, C.
241 Nelson, R. P.	242 Boyer, R. C.
250 Hogan, M. J.	255 Montgomery, M.
256 Ross, R.	257 Joyce, F. L.
266 Schultheis, R.	269 Pollard, L. J.
275 Luhman, F.	277 Tanney, L.
281 Siedler, A.	288 Moore, F.
292 Merryman, J. R.	300 Newman, E.

<>

ELI LILLY CO. ACQUIRES RIGHTS TO LLOYD'S RE- AGENT AND ALCRESTA AL- KALOID.

Arrangements have been consummated whereby the firm of Eli Lilly & Company, Indianapolis, Ind., have acquired the sole privilege of making and marketing the alkaloidal precipitant known as Lloyd's Reagent,

which is a form of hydrous aluminum silicate. They have also acquired the right to manufacture all commercial products, medicinal or otherwise, such as tablets, triturates, pills, capsules, and pharmaceutical preparations generally, in which the trade-mark term "Alcresta" is employed. Whosoever may be concerned in this subject, or in acquiring privileges and rights under the patents granted the undersigned, either at home or abroad, is hereby referred to the aforementioned firm, Eli Lilly & Company, the undersigned being relieved from all commercial connection with the subject.

It is the mutual desire of both the undersigned and of Eli Lilly & Company, that every possible opportunity be extended in the direction of chemists and scientists engaged in research work. Both will therefore take pleasure in extending whatever scientific data may be at their command, and to investigators, whether physiological, chemical or clinical, Lloyd's Reagent will be supplied by Eli Lilly & Company at a special price, which will be announced later.

It should be stated that inasmuch as the reagent has become commonly known as "Lloyd's Reagent," that term, in connection with the scientific name, "Hydrous Aluminum Silicate," will hereafter be accepted as the name of the reagent itself, which will be thus labeled, the short term "Alcresta," being a trade-mark term, applied only to the commercial products of this reagent, manufactured by Eli Lilly & Company.

Respectfully,

JOHN URI LLOYD.

Cincinnati, Ohio, Nov. 17, 1913.

THE LAST WORD OF WISDOM.

Success is for the loud talkers, the self-convinced dogmatists. Everything is admitted on condition that it be noisily proclaimed. Let us throw off this sham and recognize that, in reality, we know nothing about anything if things were probed to the bottom. Scientifically, Nature is a riddle without a definite solution to satisfy man's curiosity. Hypothesis follows hypothesis; the theoretical rubbish heap accumulates, and truth ever eludes us. To know how not to know might well be the last word of wisdom.—*Henri Fabre*.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



NEW ENGLAND BRANCH.

The first regular meeting of the season was held Wednesday evening, November 12, at Hotel Bellevue, Boston, Mass.

Dinner was served at half-past seven, after which President Estabrook presented the speakers, giving each the subject, "How may we best interpret the changing conditions in Pharmacy?"

The subject was broad and each gentleman took a different view of it, but it was pleasing to note that each one believed fully that pharmacy and humanity were getting better rather than worse, that our lot is happier than our fathers'.

C. H. Packard, President of the Massachusetts College of Pharmacy, divided his remarks between the College and the A. Ph. A., tracing the changes during the existence of each and showing each step to be one of progress. Incidentally he gave a little A. Ph. A. membership talk, and some of the blanks given out ought to come back with five dollar bills.

President J. F. Finneran of the N. A. R. D. spoke of the growth of that organization and he outlined the establishment of state boards and showed by inspectors' records the present high standards maintained in the majority of drug stores.

Wilfred F. Root of Vermont, representing the state board of that state, related the modern methods of examining applicants, a revelation when compared with the old unfair catch-question method. He also reviewed the

adoption and extension of reciprocity between states.

W. D. Grace of Portsmouth, N. H., brought greetings from his state and commended the work of this Branch.

T. J. Bradley, Dean of the Massachusetts College of Pharmacy, went over his early experiences in pharmacy, commenting upon the advances made by colleges and by pharmacy generally.

W. S. Briry, appointed to the Massachusetts State Board a few hours previously, received the heartiest congratulations from the assembled pharmacists. Mr. Briry responded briefly, thanking all for their interest in his behalf.

Willis E. Terrill, Montpelier, Vermont, spoke briefly on the prosperous outlook for pharmacy in the future.

F. A. Hubbard, Chairman of the Legislative Committee of the Massachusetts S. Ph. A. addressed the meeting upon the extremely rapid changes made by legislation. Altogether he thought the new laws were better and more just than the old, but he impressed upon the audience the fact that the associations must be strengthened as much as possible, and that all should work together in preventing undesirable bills promoted by the misinformed from becoming laws.

R. ALBRO NEWTON, Secretary.

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NASHVILLE BRANCH.

At the meeting of the Nashville Branch of the American Pharmaceutical Association held in Furman Hall, Thursday afternoon, November 13th, the subject of the location of the A. Ph. A. Headquarters was freely discussed and the opinion unanimously expressed that it should be located in Nashville. A committee consisting of W. R. White, Ira B. Clark and S. C. Davis was appointed to cooperate with the Nashville Industrial Bureau in properly presenting Nashville's claims to the Council.

"Articles for Quick Dispensing" was the regular subject for discussion. Ira B. Clark began the discussion by saying that more stock solutions were used by the large up-town stores than the suburban stores, since they had a much larger prescription business. He kept two solutions for making Sol. Ammon. Acetate, Sol. Boric Acid, Sat. Sol. Pot. Iodide, and a few others, but said the

Sol. Pot. Iodide become colored after a while.

Dr. E. A. Ruddiman stated that a solution of pure potassium iodide would color in three or four weeks, but that the commercial article would keep several months on account of the carbonate usually present in it.

Dr. J. M. Rogoff thought light and temperature had much to do with the change. He strongly discouraged the use of stock alkaloidal solutions. He gave the results of some recent experiments he had made on frogs with solutions of cocaine, morphine, strychnine, atropine, codeine, nicotine and thebaine which had been made five or six weeks, all of which showed signs of deterioration. He and Dr. Ruddiman agreed to do some experimental work along these lines and will report their results to the Branch.

Messrs. Hutton, Clark and Davis discussed the keeping qualities of Ointments, and were of the opinion that retailers neglected this class of preparations too much. Most of them should be made fresh when needed.

How to keep Iron solutions from turning dark was discussed by Messrs. Burge, Davis, Ruddiman and White. Dr. Burge stated that he had found that Ammonia turned Iron solutions dark, and in making Elix. Phos. I. Q. and S. he does not neutralize with ammonia, leaving the solution acid, and in this way gets a nice green elixir that keeps a long time unchanged. Lead in the bottles and light were given as causes of the change. The Branch then adjourned.

W. R. WHITE, Secretary.

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CINCINNATI BRANCH.

The regular monthly meeting of the Cincinnati Branch, A. Ph. A., was held November 11, 1913, at Lloyd Library.

Prof. John Uri Lloyd opened the meeting, but on account of an urgent appointment, turned over his duties to Vice-President Prof. Theo. D. Wetterstroem.

The reading of the minutes of the previous meeting by the Secretary having been approved, a short business session ensued.

The report of the Membership Committee showed a total membership of forty, with the assurance of same being increased.

Prof. C. T. P. Fennel, as Chairman of the Committee on Pharmaceutical Progress, gave an interesting talk, the subjects of which

being culled from various recent notes of the pharmaceutical press.

Among others he mentions Lloyd's New Process for the detection of alkaloids (acidulated water and Fullers' earth, alkaline), failing to react with the usual Mayer's reagent.

He also referred to Raubenheimer's efforts to discourage the use of Synthetics and returning to the use of Botanics.

The use of soap bark as a constituent of beverages was condemned, while he also seeks information regarding a new product, known as "Sapanan."

He also cited from foreign journals a number of artificial products, containing a high amount of nitrogenous substances, intending to reduce the high cost of living; quoting figures regarding the claims of some of these artificial products as to their food value.

There are a number of these artificial compounds on the European market today.

He also mentioned Vegetable Milk, as well as the use of Radium and Radium Water, the curative and efficient properties of which seem apparently to be endorsed by the European medical profession.

He mentioned a new process for the production of artificial silk and called attention to what should really constitute the Castile Soap of the U. S. P.

The responsibility of the pharmacist was emphasized regarding the purchase of drugs and the reliability of chemicals, citing cases of government confiscation of Aspirin, which, although bearing the proper label, consisted mainly of sugar of milk and bicarbonate of soda. Also, Juniper Berries, which were nearly exhausted, still however retaining their natural form.

Professor Fennel received a vote of thanks for his interesting talk, and was then followed by Hon. Frank H. Freericks, who chose for his subject, "Some Laws of Interest to Pharmacists."

Mr. Freericks treated his subject in a masterly manner, giving exhaustive data upon some of the laws, that particularly affect the retail druggist, mentioning the fact for instance of the Agricultural Commission Act, which takes away all power from the State Board of Pharmacy, giving same to a commission of farmers.

He questions the efficacy of such proced-

ure, as the Board of Pharmacy's offices are retarded to simply issuing certificates.

The antinarcotic law or so-called Duffey law was given special attention, showing the great inconveniences and unjust restrictions placed upon the retail pharmacist, if the absolute letter of the law were to be enforced and not the intent of the legislature.

Under the provisions of this act, it would be unlawful to dispense a mixture containing a narcotic drug, no matter how minute, except upon the written order of a physician. It would be unlawful to sell liniments, ointments, plasters, etc., if they contained even the faintest trace of any narcotic drug.

Mr. Freericks further pointed out a number of inconsistencies in the enforcement of such a law, and the Secretary as a result was ordered by the Association to send a communication to Gov. James Cox of the State of Ohio, voicing the members' protest against the enactment of the Duffey act into law.

Another law is the so-called Insecticide Law, calling for a license of twenty dollars annually for the manufacture of any insecticide or fungicide. This, however, under a recent ruling, applies only to the larger manufacturer and not the retail druggist.

Mr. Freericks' address was well received and was commended by the Chairman for the practical manner with which he treated his interesting subject.

Prof. Theo. D. Wetterstroem spoke briefly regarding establishing of rigid standards for the examination of the alkaloidal strength of crude drugs and their preparations, mentioning especially coca leaves and their products.

The meeting was better attended than usual and the members all voted to have spent a very enjoyable and instructive evening.

CHAS. A. ADMEYER, Secretary.

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DENVER BRANCH.

October Meeting.

Experience has proven that meetings are better attended when preceded by a dinner, so Branch votes to give monthly dinners.

Following last year's custom the Denver Branch launched its first meeting after the summer's rest by a dinner at the Albany Hotel, Tuesday evening, October 21st. An excellent meal, good attendance and a buoy-

ant spirit made this social preliminary exceptionally pleasant, while a box of Tampa-Cuba cigars, supplied through the courtesy of Mr. Cole, with the compliments of the Tampa-Cuba Cigar Co., added further to the comfort of the members during the business session which followed.

The latter was called to order by President Hover at 8 o'clock and after the reading and approval of the minutes of the May meeting the Library Committee reported on the work done during the summer months, and asked for instructions in regard to the purchase of books. On motion of Mr. Best the entire matter was left in the hands of the committee which was instructed to buy such books as it deemed advisable and the funds at their disposal permitted.

Mr. Clayton suggested that the representative of the Pacific Coast Borax Co. might give us an interesting paper on Borax and Boric Acid, if invited. The suggestion was appreciated and the Entertainment Committee instructed to invite Mr. Inderlied.

The Committee on Permanent Quarters had no report to make, but said they would try and have a report at the next meeting.

Mr. Alkire gave an interesting talk on his trip by auto to Cincinnati, and a brief report of the N. A. R. D. Convention, which will be supplemented by a fuller report at the next meeting.

Prof. Washburn, Dean of the School of Pharmacy of the University of Colorado, spoke at some length on the progress of the school and the hardships necessarily encountered in the work of establishing a new school. In regard to the third year that was planned to be given in Denver, Prof. Washburn said, that it could not come until sufficient students taking the three-year course could be enrolled to make the maintenance of this course in Denver possible. He urged that the pharmacists of Denver lend their moral support and aid to the school and expressed the belief that, with the cooperation of Denver druggists, the wish of the Branch in securing this third year given in Denver could soon be realized. He also extended an invitation to the Branch to visit the school. Several members discussed the subject, Messrs. Hensel, Bresler, Clayton, Clark and others taking part.

President Hover then spoke on the large investment in prescription stock in many drug stores having a very limited prescrip-

tion business. He stated that the number of prescriptions filled did not warrant the investment necessarily tied up in this department of the store and that the resulting economic waste and the necessity of employing a registered man were one of the reasons for the depressed conditions of the drug business today. Something should be done. As one remedy he suggested the consolidation of the prescription departments of six to ten proximate stores in various neighborhoods into exclusive prescription pharmacies where all the prescription work of the so consolidated stores could be done. Such an agreement, if it could be reached, would mean greater efficiency, better service and increased profits for the druggists by cutting down maintenance expense and investment as well as restoring and increasing the confidence of the medical profession. The question was debated at some length and opinion was somewhat divided as to whether any pharmacist could be induced to give up his prescription department on such an agreement. Most of those present seemed to think that they would hate to part with their prescription department regardless of what agreement might be reached, but Mr. Clark, for one, expressed his willingness to enter such a plan. The argument drifted into the question of proprietary medicines, Mr. Hensel stating that he believed this part of the drug business was on the decline. Mr. Hover, however, offered some statistics which showed that the sum total of the volume of patent medicine business was practically the same today as it had been for a good many years, but that the variety or number of these preparations sold was steadily increasing, having doubled several times in the last decade. After this discussion was closed the Secretary read his report of the Sixty-first Annual Convention of the A. Ph. A., to which he was delegate from the Denver Branch and the Colorado Pharmacal Association.

On a query by the Secretary, it was moved and carried that all future meetings of the Denver Branch will be preceded by a dinner unless otherwise ordered by the Branch.

On account of President Hover's absence from the city at the date of the next regular meeting, it was decided to hold the November meeting a week earlier than usual, or November 11th. There being no further business, the meeting adjourned.

F. W. NITARDY, Secretary.

DENVER BRANCH.

November Meeting.

Members of the Denver Branch of the A. Ph. A. gathered at 6:45, November 11th, at the Albany Hotel for dinner, with District Attorney John Rush as guest of the evening, the following members being present: W. A. Hover, John Best, W. O. Scholtz, John A. Martin, L. Wilson, E. Powers, W. T. Hover, A. W. Clark, Charles J. Clayton, Adolph Swoboda, Henry Cordes, L. L. Alkire, C. H. Skinner, A. C. Cole, S. T. Hensel, R. H. McKenzie, B. W. Strickland, S. L. Bresler, V. Lagasse, Prof. J. Seymour, E. L. Scholtz and F. W. Nitardy.

After a very enjoyable meal the meeting was called to order by President Hover at 8:15. The minutes of the previous meeting were read and corrected in the statement "that the sum total of the volume of patent medicine business was practically the same today as it had been for a good many years," in that this statement applied to the percentage of the total volume of wholesale drug business done only. As the amount of business done had steadily and substantially increased from year to year, the patent medicine business had increased in the same proportion.

With this correction they were approved.

Mr. Clayton, Chairman of the Committee on Permanent Quarters for the Pharmaceutical Associations of Denver and the State, and the Board of Pharmacy, reported progress, stating that the committee had inspected various rooms and locations, but so far nothing to warrant the recommendation of definite plans and quarters had been accomplished. The committee would continue its work and report further at a later meeting.

The Library Committee reported briefly on the progress of the last three weeks and stated that it expected to have the books that its funds permit it to buy, as well as all other necessary details for the formal opening of the library, completed by the first of the year.

The Membership Committee had no report to make.

Mr. L. L. Alkire, delegate to the N. A. R. D. Convention, then read his report of the Cincinnati meeting.

Mr. A. W. Clark moved the adoption of the report, together with a recommendation for publication. The motion carried.

A paper, presented to the Section on Practical Pharmacy and Dispensing of the A. Ph. A. at the Nashville meeting, to which Mr. Hensel had made some additions since the date of that meeting, was then read by the author.

The title of the paper was, "What Is the Cause of the Instability of the Compound Syrup of the Phosphates (Chemical Food) N. F.?"

After a brief discussion Mr. Best moved the adoption and publication of the paper. The motion carried.

President Hover then arose and addressed District Attorney John Rush with the following words:

"This association, Mr. District Attorney, represents, as you see, the leading druggists of the city, this association being a branch of the A. Ph. A., which national association is of sixty-two years standing. This branch, representing as it does the national body, stands for the principles for which that body stands, standing for the best in ethical practice of pharmacy. We stand for this, and we stand for the enforcement of laws governing the practice of pharmacy, for the enforcement of laws intended to regulate the sale of intoxicating liquors, and also the enforcement of laws intended to regulate the sale of habit-forming drugs.

"We are thoroughly in harmony and sympathy with those laws as they now stand on the statute books. Some of these laws as applied locally, particularly in connection with the sale of intoxicating liquors, work a hardship on some of the retailers in business in various sections of the city, who carry as a part of their stocks of merchandise these goods in small quantities to be used for legitimate household purposes. Beyond that, I do not think that any member of this branch would advocate the sale or the use of intoxicating liquors by the retail druggists.

"Inasmuch as a recent decision in our district and supreme courts have brought about a condition that is not well understood, we thought it an opportune time for you to come before us and give us a little talk and some explanation of your interpretation of these decisions as applying to the sale of intoxicating liquors, and also as applied to the sale of habit-forming drugs.

"Our present statutes as regulating the sale of habit-forming drugs have largely been formulated and fathered by the retail druggists. Our national legislation, referred to by Mr. Alkire in his report, known as the Harrison bill, was in the first instance in an unworkable condition, as is most legislation that comes up before our legislative bodies, formulated in the first instance by

those who have not the requisite practical knowledge and experience in regard to the working of the law, which of itself might be very desirable.

"The Harrison law in the first instance was an unworkable proposition, but through the intervention of what is known as the National Drug Trade Conference, a conference composed of delegates from the National Wholesale Druggists' Association, and from the parent body of this organization, and the National Association of Retail Druggists, the original bill was so modified as to put it in workable form, and these modifications were adopted by congress, and that bill as it now stands is as near perfect as a bill of that kind can be without the practical experience resulting from the enforcement of the law itself.

"With this explanation, Mr. District Attorney, I take pleasure in presenting you to this body."

District Attorney Rush, after expressing his pleasure to be able to address the meeting, explained at some length the several statutes regulating the sale of alcoholic liquors in the State of Colorado, and the interpretations which had been placed upon them by the Supreme Court. Following this, he discussed the provisions of the anti-narcotic laws and the policy of his office in regard to their enforcement.

In reply to the address Mr. Hover said:

"Mr. District Attorney, I am sure that the members of this body heartily endorse your wish and desires to make Denver a better place to live in. You may not be aware of it, but the law which you read from the statute books referring to the sale of cocaine originated in this body and was endorsed by this body before it was introduced into the legislature, as well as by the drug trade of the city of Denver. We therefore are in hearty sympathy with the enforcement of this law, and we are necessarily bound to assist you in its enforcement and in the carrying out of its provisions.

"There are some questions in connection with the rulings of your office bearing on the sale of certain malt liquors, etc., which probably the retailers of this body would like to have enlightenment on. Malt liquors, as you are probably aware, represent quite a range. The most common type, of course, are the varieties of beer. We have, however, some medicinal malt preparations about which there might be a question, and if you are prepared to give a ruling on some of these preparations, I am sure that such a ruling would be desirable in the present existing circumstances. I have reference to the type of malt preparations, of which a preparation known as E. & M. Extract of Malt might serve as an example. This is a medicinal malt preparation used by nursing mothers and invalids, and is sold more fre-

quently without than with a physician's prescription. So far as I know it has never been used as a beverage. Just where the line of division comes in the handling of malt preparations is becoming a puzzle to a great many of our retail druggists. There may be some other articles which may occur to the members present; if so, feel perfectly free to ask our district attorney his interpretation of the article in question."

District Attorney Rush replied:

"I would suggest, Mr. President, that in matters of this kind you are probably all familiar with the proposition that a curbstone opinion of a lawyer is not of much value. The better way to reach that goal is to present it through a committee of your organization to my office, and then we will look the matter up under the law and advise you in writing as to what the law is in that particular subject.

"My offhand opinion would be that anything in the nature of a beverage would come within the inhibition of the law; anything that is strictly medicinal would not. It would depend largely upon the amount of alcohol in it as to whether it is really a beverage or not.

"I think it would be wise for your organization to appoint a committee to take these matters up and then present them to my office, giving the ingredients of the medicine or compound, whatever it may be, the percentage or proportion of alcohol, or any spiritous, vinous or malt ingredient, and then we can take the matter under consideration of authorities and decisions and advise you with a better purpose."

Mr. Clayton responded, saying:

"The latest remarks of the district attorney make me glad I voted for him. Note the contrast of his offer to give us a written opinion on these questions which we may submit to him, to the treatment which was accorded us by another officer of the state, who told us that it was his business to interpret the laws only for the officials of the state and not for private individuals or interests. To find an answer to our questions, he advised us to bring a suit in the courts and we would ultimately be answered. We tried it. When we got through we did not know any more than when we began, as in the final opinion of the court many of the questions were not answered at all. There are a number of questions on which some of the members here would like to be informed.

"A druggist in a dry territory may only sell upon the written prescription of a physician, but we have not heard whether there is a distinction in the state law as between those who sell on prescriptions and those who do not. The question in the minds of many of us is as to whether we have a legal right to sell alcohol for rubbing purposes to patients, when stated that it is not for

beverage purposes; however, of such a nature that it is capable of being diluted for beverage purposes if the purchaser were so inclined. These points, and no doubt others, occur to the minds of those present and we would like to have them answered. We feel, many of us, that it ought to be the business of the officers of the law to help us obey the law and not leave us in ignorance of the law until we are prosecuted. This condition in the past has sometimes made us feel that we were in reality victims of the law."

"I am a druggist located in dry territory," said Mr. Alkire, "and quite understand the position of a druggist in such territory, but I am not exactly clear as to the position of a druggist in wet territory. Do I understand you, Mr. Rush, to say that he has the privilege of selling liquors in any quantity that he desired so long as he obeyed the closing hour feature of the law?"

Mr. Rush answered: "I will say in answer to your question that this druggist would have to get signers under the law, the same as the saloon man."

President Hover asked: "Would he be compelled to observe the hours of closing and also keep closed on Sundays?"

"Strictly speaking, that would be true," replied Mr. Rush; "but the idea of my office at present would be to apply the same ruling to him as to cafes, restaurants, etc., enforce the law as to the sale of liquor, not as to the closing of his place of business. The strict letter of the law would cause us to close every hotel and cafe, under the decision of the Supreme Court that every place that retails liquor is a saloon. But I feel that the purpose of the law is to stop the sale of the prohibited product during those hours, and not stop the transaction of other business conducted in connection with it. I have assured hotel men, and kindred lines of business, that if they stop the sale of liquor at midnight and on Sunday they may still conduct their business for other purposes. The same ruling will apply to drug stores."

"Mr. District Attorney," said President Hover, "I think we will undoubtedly carry out your suggestion of formulating certain questions that will be presented to your office for ruling. One of those, as suggested by Mr. Clayton, is the sale of alcohol. There is a great deal of grain alcohol used by druggists of this city and elsewhere for manufacturing purposes, and also for household use, and used in a perfectly legitimate way. I know of no instance where alcohol

is used in this territory and manipulated or worked up in a form that can be used as a beverage, for the reason that it is almost impossible for the layman or consumer to utilize the alcohol in such a way as to produce a desirable beverage. In only one section of this country that I know of was alcohol sold largely as a beverage, and that was in certain portions of Minnesota and Wisconsin in Swedish and Norwegian communities. They used to buy alcohol and by process of dilution produce a form of beverage."

"Cannot some ingredient be put into alcohol that would not injure it for its legitimate purposes and yet make it unavailable for dilution as a beverage?" asked Mr. Rush.

"For external purposes it can be," replied President Hover, "but for internal purposes grain alcohol could not be so treated. Alcohol for external purposes only could be so denatured as to render it impossible to work it up into a beverage."

The question of the ownership of a prescription was brought up and Mr. Bresler stated that there were court decisions on record deciding that it belonged to the druggist, while in other cases it had been decided that it was the property of the patient. Mr. Rush stated that under the law, prescriptions calling for narcotics must be kept by the druggist.

President Hover then called on Mr. E. L. Scholtz for some remarks on the liquor and cocaine question, whereupon Mr. Scholtz spoke as follows:

"I have nothing that would add anything to the value of the information given by the Honorable District Attorney this evening, and I believe that what I know all of you already know. But there are some things that seem unfair in the prosecution of our business in Denver, and it has always been so, I guess, ever since I have been in business. I believe the District Attorney and you all know where I stand on the enforcement of law. I have placed myself pretty squarely on record and am not afraid of that position. But the inequality of the administration of the laws of the city and even of the state have been so directly at variance with what is fair, that I have sometimes sat down and kept still because it did no good to go to the officers who are supposed to administer the laws; therefore, when a situation like that presents itself there is very

little for the ordinary citizen to do. All of us present here tonight know that you can buy all the cocaine you wish and nobody interferes with the sale of it. Mr. Rush has said that he has no one in his office to look up the offenders. The police department of the city of Denver have been absolutely and utterly disregarding the law since it has been upon the statutes. There has been a constant violation of the laws, and it has been known at the city hall. It has been reported to them over and over again, but they do not care about it. There are special favorites of the police department who are permitted to go on selling cocaine. There are druggists in the dry territory of Denver who pay no license, but who sell all the beer, wine and whiskey the neighborhood desires, and nobody seems to take any cognizance of the fact. The druggists down town know it, the police department and city hall officials know it, but they do not care to enforce the law. Of course, it is said that if you go out to take evidence and thereby become a party to the offense, there is no offense committed. This has been the usual plea why they cannot get at the offenders. It is certainly unfair to those of us who are square and above board and pay a license, that we cannot have the protection that absolutely belongs to us. It seems that we simply have to accept the situation as it is and let the other fellow go his way, while we do what we know is right. But there are violators, men who are in the business for another purpose—to make money out of unfortunates of this life. Mr. Rush, you know as well as we all do, that if cocaine were not sold in Denver, the county jail would have a great many less victims. Many places exist on Larimer street where you can purchase cocaine in packages, and these places are kept for this particular purpose. It is sold in a disguised way, but the victims themselves can get it very easily. I admit that it is pretty difficult to get at a way to prevent it. Recording the sale of cocaine is one way of following up the users of the drug, but that registration, I fear, is not well done.

Mr. Rush spoke of open gambling. I have gone into the cigar stores or stands in the buildings, and seen them throwing dice just the same as I did in California, where it is an open privilege. But here it is supposed to be absolutely prohibited, as I understand

it. Yet it goes on every hour in the day. No one seems to be surprised at it, yet it is an open violation of the law. I think the same law should apply to all of us, not only to the druggists, but to the saloon men, hot-tling men, etc. It is well known that you can get a drink if you want it on Sunday. I hate to see too much reform going on all at once; business is not good in Denver at the present time, but if a law is on the books, it should be enforced or taken off the books. I should like to see the police enforce the law.

"One question I would like to ask: You said that the law of the state requires a license of \$600 for the saloon man. Is not that a city law instead of a state law?"

Mr. Rush answered, "It is a state law, but applies to all cities or incorporated towns. Cities can make it more, but not less."

President Hover then spoke as follows:

"You can rest assured, Mr. District Attorney, that all reputable druggists want to live up to the law, and moreover, they want to see this cocaine and morphine habit killed. I know of no druggists who want to sell morphine and cocaine, and you can have the cooperation of all the druggists of this city who are worthy of the title. If we can have the protection we deserve, we will appreciate it. If the other fellow does not have the special privilege we do not want it ourselves.

"In regard to the sale of cocaine, this is one of the things that cannot be regulated by the state itself; only national regulation will prohibit its sale properly. While we have a state law, necessarily there is nothing in that law that will prevent any retailer, or any physician, or any consumer from purchasing cocaine outside of the state and shipping it in. I am convinced that cocaine should be prohibited from importation into this country entirely, as its advantages are so slight when compared to the destruction it works, and if the evil continues as it has in the past, I think that is where the matter will finally land."

The liquor license and narcotic questions were further discussed, Messrs. Bresler, W. O. Scholtz, Rush, Hover, Clayton, Cole, Alkire and others taking part. On the question of what was to be done with the licenses held at present by druggists, hotels and cafes for the sale of liquor as permitted by the city ordinance, claimed to be in conflict with the state law, District Attorney Rush stated that for the unused portion of these licenses the money probably would be

refunded by the city. At least he considered this the only fair settlement.

Delivery of liquors into dry territory was also touched on, Mr. Rush citing several cases of peculiar circumstances and their decisions.

After the discussion had ended, Mr. Best moved the appointment of a committee of five to formulate the questions to be presented to District Attorney Rush. This brought up a discussion as to whether it would be best for the branch to handle this matter alone or invite the city association to cooperate. Mr. Alkire, president of the city association, expressed the belief that that body would be glad to help the branch in this matter and would probably have their legislative committee, of which Mr. Bresler was chairman, act in this capacity.

The motion before the house was therefore withdrawn and a motion by Mr. Wilson substituted in which it was moved to appoint two members of the branch to act with the city association legislative committee on this matter, Mr. Alkire having assured the branch that this would be agreeable to the city association.

President Hover then appointed Messrs. E. L. Scholtz and A. W. Clark to serve on this committee.

After a motion by Mr. Best, seconded by Mr. Martin, to extend a vote of thanks to District Attorney Rush, the meeting adjourned.

The next meeting will be held Tuesday evening, December 16, and officers for 1914 will be nominated at this meeting.

F. W. NITARDY, Secretary.

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CHICAGO BRANCH.

October Meeting.

The first monthly meeting for the season of 1913-14 of the Chicago Branch of the American Pharmaceutical Association was held at the School of Pharmacy of the University of Illinois Tuesday evening, October 21st.

The discussion of the evening turned upon *Aleresta*, the name by which Professor John U. Lloyd designates a colloidal substance separated from certain clays and which possesses the peculiar property of absorbing alkaloids from an acidified aqueous solution

and presenting then in a quite tasteless form, probably insoluble in the stomach but readily soluble in the intestines.

Professor A. H. Clark demonstrated this property of *Aleresta* and spoke as follows:

"This reagent is a hydrated aluminum silicate and is said by Professor Lloyd to be obtained from certain clay and earth, most abundantly from Fullers earth. It possesses the property of combining with alkaloids in a medium quite strongly acid. This can be readily shown by dissolving a small quantity of quinine in acidulated water. The presence of an alkaloid is clearly shown when we add to a portion of this solution a few drops of Mayer's reagent. Upon shaking the alkaloidal solution with a few grams of Lloyd's reagent, then filtering and adding Mayer's reagent to the filtrate we find that no precipitate forms in the filtrate. Every trace of alkaloid is held on the filter with the reagent. Another striking feature is the fact that upon washing the material on the filter free from acid we find that it has none of the bitter taste peculiar to quinine, neither can the quinine be washed out in appreciable quantities by acidulated water. The combination can be readily broken up by an alkaline liquid such as ammonia water and the alkaloid removed by such solvents as chloroform, ether, etc.

These peculiarities of this material may lead to varied and valuable uses. The possibilities in the way of extracting alkaloids from drugs either in the process of manufacture or of assay are many. From a therapeutic standpoint the tasteless nature of the alkaloidal combination suggests many possibilities, and it is my opinion that this discovery of Professor Lloyd's is one of the most important and valuable in this line made in recent years."

In the discussion of Professor Clark's demonstration, Dr. Bernard Fantus, Professor of Pharmacology at the University of Illinois College of Medicine, stated that it had been his good fortune to have made the acquaintance of *Aleresta* alkaloids prior to the meeting of the American Pharmaceutical Association at Nashville. He had experimented with them to determine their suitability for "candy medication," and found that thanks to them even the alkaloids could be included in the candy *materia medica*, and presented at the meeting Sweet Tablets of *Aleresta*

Strychnine, gr. 1/200, made after the following formula:

Alcresta Strychnine, 5% . . .	10 grains
Saccharin	1 "
Vanillin	1 "
Cacao powder	50 "
Powdered sugar	438 "

Make into 100 five-grain tablets.

They were very nice in appearance and palatable, there being but a slight taste of bitterness, no more than is usual in bitter chocolate. In this manner one of the objections that was raised to Dr. Fantus' idea of candy medication for children "How about the alkaloids" has been overcome.

As to the activity of Alcresta Strychnine there can be no doubt, for it will kill a dog in convulsions. Dr. Fantus, however, could not agree with the statement that the Alcresta compound was more active than the uncombined alkaloid. It seemed to him that the effects appeared later than is usual in strychnine poisoning. He has not yet determined the relation of the minimum fatal doses of Alcresta Strychnine to strychnine sulphate, but intends to conduct such experiment shortly.

Dr. Fantus is at present engaged in a study of some of the other therapeutic uses of Alcresta and its compounds and hopes to be able to report upon results in the near future.

As to the chemistry of Alcresta compounds with alkaloids it is believed that we have to deal with an adsorption compound due to the colloidal nature of Lloyd's reagent and its negative electrical charge which causes it to attract the positively charged alkaloidal ions. The combination seemed reversible, at least, in neutral and in alkaline medium.

In this connection he also stated that the study of colloidal chemistry ought to be taken up by our association, inasmuch as some well-known pharmaceutical facts have received a new interpretation from this most recent study, and as this new field promises to yield some possibly very important innovations in pharmaceutical theory and practice.

He referred to Nitardy's demonstration, at the meeting of the American Pharmaceutical Association at Nashville, of calomel suspension made stable by the presence of minimal quantities of acacia, as an example of the importance of an understanding of colloidal chemistry, for the explanation of this phenomenon lies in an understanding of the meaning of "protective colloid," i. e., a col-

loid, minimum quantities of which suffice to impart stability to unstable colloidal suspensions.

Mr. F. P. Summers, Chief Chemist of the Abbott Alkaloidal Company, also spoke of his experiences with Lloyd's reagent. His efforts were confined to the commercial aspect of the application of this precipitant. In the manufacture of the alkaloids where the menstruum used is acidulated water, the speaker suggested that this reagent might be very efficient. However, in those cases where the drug is treated with alkali and then extracted with immiscible solvents, the use of Lloyd's reagent appears to introduce an unnecessary step in the operation.

As the reagent has been also suggested as a means of producing tasteless but still efficient alkaloids, a series of experiments on dogs and guinea pigs with the strychnine precipitate were conducted by Mr. Nielson, of the Pharmacologic department of the same company, to test the pharmacologic action. The results indicate that this precipitate is more slowly absorbed than the corresponding amount of strychnine sulphate. To one set of dogs was given the minimal lethal dose of strychnine sulphate. To another set was given the same amount of alkaloid in the form of Lloyd's precipitate. In the latter case toxic action was considerably delayed.

In conclusion, it was suggested that as a means of overcoming emulsion troubles in assay work, this reagent should offer much promise. E. N. GATHERCOAL, Secretary.



CHICAGO BRANCH.

November Meeting.

The regular November meeting of the Chicago Branch of the American Pharmaceutical Association was held at the University of Illinois School of Pharmacy building, Wednesday evening, the 19th.

The subject of the meeting was "General Principles of Pharmacy Legislation." The members of the State Board of Pharmacy and the president and members of the executive committee of the Illinois Pharmaceutical Association were invited to be present.

The following general statement was presented in typewritten form to each one present and became the basis of the discussion: "1. Pharmaceutical legislation, though framed by pharmacists and secured only

through their organized efforts, must primarily be intended to provide efficient pharmaceutical service for the public. 2. Such legislation must control the traffic in habit-forming drugs and safeguard, so far as possible, the handling and employment of poisons and potent remedies. 3. Concessions must be made so as to permit dealers other than pharmacists to supply, under proper restrictions, such poisonous substances as are used largely in the arts. 4. Standards covering school and drug store training should be provided for three grades of certificates—apprentice, assistant and pharmacist. 6. Boards of pharmacy should have full supervision of all matters within the state relating to the handling and sale of drugs and medicines. By cooperation with other state departments, facilities for analyses could be provided. 7. By cooperation with the state department of education, trained experts should be provided to conduct the examinations, but directly supervised and controlled by the board of pharmacy. 8. Appointments of board members should be made upon the recommendation of state pharmaceutical association."

James H. Wells, president of the branch, presided, and called upon Editor George Englehard to lead in the discussion. Mr. Englehard expressed himself as substantially in accord with the statement of principles as presented to the meeting. He referred to the part he took in the drafting of the original Illinois pharmacy law, adopted in 1880, and stated that it was based on a model law proposed by the A. Ph. A. previous to that time. He brought out the point that an endeavor was made in this original draft to provide for the election of the members of the board of pharmacy by the pharmacists of the state, but such provision, it was shown, would be unconstitutional, and that the members of the board must be appointed by the governor. He declared that board members in all the states were, to a more or less extent, political appointees, and that if pharmacists had the power to elect the administrators of the law, the condition of pharmacy in the several states would now be ideal.

Mr. Englehard also discussed the question of college prerequisites before examination, and stated that no such requirement should be included in the law itself, but educational requirements, as well as the character

and methods of examination, should be left to the discretion of the board. If conditions in pharmacy have reached such a state that a course in a college of pharmacy is essential to the proper qualifications of a pharmacist, well and good, let the board so rule.

He criticized severely the provisions of the law permitting physicians to dispense and held that qualified pharmacists alone should dispense medicine, and then that pharmacists should be responsible for all medicines so dispensed. In this respect he is completely in accord with the principles laid down by the Drug Reform Committee of the A. Ph. A., and further stated that the doctors were to the very front in fighting for pure food and drug legislation, but now, through the dispensing physician, 75 percent of the medicines dispensed in this country do not come within the scope of these laws.

Secretary T. H. Potts, of the N. A. R. D., was the next speaker and stated emphatically that the state boards of pharmacy have no right, nor should they have a right, to make regulations concerning the qualifications of candidates for the examination, but these qualifications should be definitely stated in the law. He spoke strongly in favor of the prerequisite requirement and wanted to know how we are ever going to place pharmacy on the footing where it belongs if we do not require an adequate and advancing education of those entering pharmacy. He referred to the successful U. S. P. and N. F. propaganda work among physicians.

Secretary Isam Light, of the C. R. D. A., also spoke of this propaganda work and stated that one of the great difficulties of the work was the indifference displayed by the retail druggists themselves. He further stated that, as a rule, those who were indifferent were not college graduates, and that the main cause of the indifference was their incompetence to properly prepare the U. S. P. and N. F. preparations. Mr. Light said that if the prerequisite clause was inserted in our pharmacy law, we would have more capable pharmacists in Illinois within a short time.

Ex-President W. B. Day spoke in favor of the prerequisite clause. He brought out the point that at present druggists did not teach pharmacy to their apprentices as in former years, and while drug store experience still had much value in the training

of a pharmacist, yet candidates for registration should now be required to show some systematic effort to qualify in pharmacy before being admitted to examination.

Mr. Wm. Gray, pharmacist at the Presbyterian Hospital, spoke of the difficulties of the apprentice acquiring a competent education from drug store experience alone and favored the prerequisite requirement.

Mr. Wells, speaking from his own experience, told how he had very successfully passed the board examination (a considerable number of years ago, however,) after a very limited experience of running errands in a drug store, followed by three months cramming. He then spent ten years as apprentice and clerk acquiring a true pharmaceutical education. He referred to apprentices nowadays, who knew nothing of scientific or ethical pharmacy, who, after a three months' course in one of these stuffing schools, successfully passed the board. He pointed out that such an "education" evaporated almost as rapidly as it was acquired, and urged that, when the prerequisite requirement was placed in the law, it be so worded as to require a reasonably complete and broad education, general and pharmaceutical.

Professor A. H. Clark presented several examples from his own experience of insufficiently educated pharmacists, particularly one instance in which the physician ordered a prescription calling for 1.60 gr. strychnine tablets, to be refilled, but with tablets only half as strong. The drug clerk dispensed 1/30 gr. strychnine tablets.

Mr. Brunstrom, of Moline, chairman of the Legislative Committee of the Illinois Pharmaceutical Association, urged upon all Illinois pharmacists unity in backing the desired amendments to the pharmacy law; that the law had enemies enough among the "patent medicine" and "wagon" men and that we must have the unanimous support of the pharmacists.

President Ralph E. Dorland, of the Illinois Pharmaceutical Association, closed the discussion. He stated that the I. Ph. A. stood solidly back of the fight for amendments to our present state law in favor of prerequisite college education, the labeling of medicines with name and amount of each potent drug contained in them, and the restriction of the sale of all powerful medicines to registered pharmacists. He said further the salvation

of pharmacy in every state lies in right legislation. To obtain legislation, cooperation is essential. The pharmacists of the state must write and present a solid front in their state organization.

A pleasing and instructive incident of the evening was the display and demonstration of oxygen apparatus, especially pieces designed for anaesthesia and for life saving, by representatives of the Roessler & Hasslacher Chemical Company.



NORTHWESTERN BRANCH.

The fall meeting of the Northwestern Branch of the American Pharmaceutical Association was held in the main lecture room of the new pharmacy building, University of Minnesota, Minneapolis, on Wednesday afternoon, November 19, 1913. The meeting was called to order at 2:40 p. m. by Mr. Stewart Gamble, president of the branch, and the following program was taken up:

1. Minneapolis' New Narcotic Ordinance, by Mr. C. H. Huhn.
2. Discussion on the U. S. P., IX, opened by an abstract of the work of the Committee on Botany and Pharmacognosy, presented by Dr. E. L. Newcomb.
3. The New College of Pharmacy Building, Dean F. J. Wulling.
4. Inspection of the New Pharmacy Building and Medicinal Plant Laboratory.

In discussing Minneapolis' new narcotic ordinance, Mr. Huhn dwelt at some length upon the history of narcotic legislation in Minneapolis and in a more general way throughout the United States. The speaker referred to the important work which has been done and is being done by the American Pharmaceutical Association and N. A. R. D. along legislative lines. He emphasized the need of not only membership in both organizations, but of active affiliation. After continual fighting for many months, and a number of interviews with the city mayor, who is himself a retired retail pharmacist, the Minneapolis pharmacists succeeded in securing the passage of a narcotic ordinance which they believe will be for the best interests of the physicians, the pharmacists and the public, and much to be preferred over the original ordinance introduced into the city council without consultation with the pharmacists, by a council member. The narcotic ordinance includes restrictions and requirements applicable not

only to pharmacists, but also to practicing physicians, veterinarians, dentists and dispensing physicians. Mr. Huhn answered a number of questions on the various requirements and the matter was further discussed by Messrs. Allen, Tupper, Wulling, Thompson and others.

In opening the discussion on the U. S. P., ninth revision, Dr. Newcomb first referred to the number of vegetable drugs which have been recommended for deletion by the committee on scope and also to the number which have been recommended for addition. Attention was called by Mr. Gamble and Mr. Rauch to the extensive use of *Phytolacca* by certain physicians. *Santonica* and *Catechu* were referred to by Dean Wulling as illustrating how certain drugs may be dropped from the Pharmacopœia on account of the inability to secure satisfactory supplies, and later be reinstated when new supplies become available. Mr. Allen questioned the advisability of dropping *Styrax*, since its use occurs in the preparation of *Tinctura Benzoini Composita*. The general changes in what should constitute a monograph for a vegetable drug in the U. S. P., as indicated by the report of the Committee on Botany and Pharmacognosy, were next taken up. Dr. Newcomb called particular attention to the definitions which state in every case, where essential, the amount of stem or other more or less inert parts which will be permitted. The introduction of commercial drug names was commented upon favorably, as was also the indication of the habitat of plants yielding drugs of which the species is held in question. The elimination of statements concerning the time of collection, where not substantiated by research, was considered to be a step in advance. These fundamental changes in connection with the addition of synonyms, it was felt would be a great help to the federal authorities in keeping drugs of poor quality out of the U. S. Attention was called to the extended outer morphological descriptions, which are not only exceedingly complete in detail, but also include descriptions of those parts which may be present in limited amounts. The introduction of descriptions of microscopic sections of drugs was pointed out as affording not only a ready means of identification, but also as a means of distinguishing between closely related species (and this frequently) where all

other methods fail. The descriptions of powdered drugs, both physical and microscopical, were commented upon, and a number of the more important ones were read to indicate the completeness of the work. Special attention was called to the large number of simple, easy tests which are presented and which give to the busy retail pharmacist an opportunity with but test-tube, beaker and a few reagents to determine qualitatively, and in many instances quantitatively, the value of vegetable drugs. A number of the more important and potent drug descriptions, such as those of *Aconitum*, *Belladonna*, *Digitalis*, *Rheum*, *Asafoetida*, etc., were taken up and studied, the study being facilitated by a display of living plants, drug specimens produced by students, and other drugs, showing adulterations, etc. Special interest was manifested in a specimen representing the root system of *Rheum palmatum* and showing five large rhizomes from eight to fifteen centimeters in diameter, also the large central rhizome, from whence the so-called "black-hearted" rhubarb is probably derived, and the large roots which are recommended to become official. Upwards of 200 specimens of *Digitalis*, *Stramonium* and *Belladonnae Folia* were exhibited. These were all packed in air-tight, one or two-quart glass fruit jars, the *Digitalis* being packed with lime. The specimens represented part of the work of students of the college, in connection with which Mr. Newcomb stated that a total of 1030 individual drug specimens had been produced by students, over 900 moisture determinations made, 2600 outer morphological drawings with descriptions completed, 1200 medicinal plants had been potted by students and were being grown in the plant laboratory for further histological work, and that 700 permanent plants had been placed in the garden by students, and that a total of about 6500 specimens had been handled by students during the quarter just closing. In closing the symposium on the Pharmacopœia, Dean Wulling stated that while the tendency in pharmaceutical revision was toward lessening the number of drugs, at the same time it was for better drugs, for while those drugs of questionable value were being eliminated, standards were being provided for those of known value, which could not help but increase their quality. The consensus of opinion of those present was to the effect

that the adoption of vegetable drug standards along the lines as indicated by the report of the Committee on Botany and Pharmacognosy, would not only keep the U. S. P. among the foremost of the world, but that it would also, by the enforcement of its standards under the provisions of the Food and Drugs Act, raise the quality of vegetable drugs. Among those taking part in the discussion were Messrs. Haynes, Rauch, Frost, Huhn, Allen, Smedley, Gamble, Brewer and others.

At this juncture in the meeting, Dean Wulling introduced Mr. Charles Herbert Rogers, a new member of the faculty of the college of pharmacy, who responded in very well chosen words.

Dean Wulling then, upon request, gave a brief history of the pharmacy building, the medicinal plant laboratory and the medicinal plant garden. He explained how two fire losses of respectively \$30,000 and \$4000 were, through his persistent efforts, added to a legislative appropriation of \$75,000, and that the total of around \$109,000 was nearly all expended at this time on the new building and part of its equipment. The new building is 60x115 feet in dimensions, four stories high, entirely fireproof, equipped with the most modern appliances and conveniences, such as hot and cold water, gas, electric current for light and power, steam under pressure, air pressure, steam heat with thermostatic control in every room, metal weather strips and metal window screens, imported washable window shades, vacuum cleaning system operated by a 4-h. p. motor, electric clocks in every room, elevator, intercommunicating telephones. The new furniture, including students' work tables and all other laboratory and office furniture, is entirely of steel, made to order according to drawings furnished by the faculty and costing up to the present around \$20,000.

The new medicinal plant laboratory is 38x61 feet in dimensions, with a full basement, in which a complete milling plant is installed, operated by a 10-h. p. electric motor, a 5-h. p. and a 2-h. p. The superstructure for the plant house proper has not only abundant facilities for the housing and growing of medicinal plants, but for laboratory work for sixty students at a time. The dean stated that so far as he knew there was no other similar building in this country. The

value of the building, exclusive of the medicinal plants, is around \$18,000.

The meeting concluded with a trip of inspection through the two buildings and adjourned at 5:15.

E. L. NEWCOMB, Secretary.

Council Business

COUNCIL LETTER No. 5.

PHILADELPHIA, NOV. 3, 1913.

To the Members of the Council:

Motions No. 7 (Election of F. I. Lackenbach of San Francisco to Committee on Transportation), No. 8 (Election of J. G. Roberts as a member of the Committee on Unofficial Standards) and No. 9 (Renewal of Bond of Treasurer), have each received a majority of affirmative votes.

Motion No. 10 (Appropriation of \$250 for Committee on Membership.) Moved by J. H. Beal, seconded by J. A. Koch, that \$250 be appropriated for the use of the Committee on Membership. The appropriation has been approved by the Committee on Finance.

Motion No. 11 (Appropriation of \$25 for Women's Section.) Moved by J. H. Beal, seconded by J. A. Koch, that \$25 be appropriated for the use of the Women's Section. The appropriation has been approved by the Committee on Finance.

It will be recalled that at the meeting of the Council held at Nashville on August 23, 1913, the following resolution was adopted:

"H. M. Whelpley moved, seconded by J. W. England, that the question of increase of salary of the Editor of the JOURNAL be referred favorably to the Committee on Finance and the General Secretary, with power to act, the amount of increase to be determined by the Committee on Finance and the General Secretary."

The Chairman of the Committee on Finance writes that the members of the committee are a unit in favor of an increase, and that the sum of one thousand dollars is satisfactory to all.

Since the committee was given "power to act," it hardly seems necessary for the Council to approve its action, but as no date from which the increase was to take effect has

been mentioned in the original motion, the following motion is submitted:

Motion No. 12 (Increase of Salary of Editor of Journal). Moved by J. A. Koch, seconded by J. W. England, that the annual salary of the editor of the Journal be increased \$1000, said increase to take effect as of September 1, 1913.

Motion No. 13 (Election of Members). You are requested to vote on the following applications for membership:

No. 9. Mrs. Hampton Ray Kenaston, B. E., M. E., Bonesteel, South Dakota, rec. by E. C. Bent and D. B. Jones.

No. 10. Ebert H. Wisner, 508 Washington St., N., Valparaiso, Ind., rec. by E. C. Bent and D. B. Jones.

No. 11. John J. Tobin, 243 Dorchester St., S. Boston, Mass., rec. by C. H. Packard and Elie H. LaPierre.

No. 12. William Leon Cummings, 117 Standard St., Syracuse, N. Y., rec. by J. H. Beal and J. W. England.

No. 13. Joseph Pancoast Millikin, Ph. B., B. S., Ph. C., 451 Jefferson Ave., Brooklyn, N. Y., rec. by Ralph C. Holmes and Eugene L. Maines.

No. 14. Lynn Stanford Blake, Auburn, Alabama, rec. by J. H. Beal and J. W. England.

No. 15. Louis Heister, S. E. Cor. 7th and Elm Sts., Cincinnati, Ohio, rec. by John Uri Lloyd and Chas. A. Apmeyer.

No. 16. Samuel Morgan, No. 1 The Dixmont, Dixmont Ave. and Gilbert Ave., Cincinnati, Ohio, rec. by Chas. A. Apmeyer and Fred L. Kotte.

No. 17. John A. Dorjahn, Blue Island, Ill., rec. by W. B. Day and E. N. Gathercoal.

J. W. ENGLAND,

Secretary of the Council.

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U. S. PUBLIC HEALTH SERVICE.

LaGrange, J. V., Pharmacist. Granted 2 days' leave of absence from Oct. 13, 1913, under paragraph 214, Service Regulations. Oct. 15, 1913.

Scott, E. B., Pharmacist. Granted 25 days'

leave of absence from Oct. 11, 1913, Oct. 8, 1913.

Spangler, L. C., Pharmacist. Granted 27 days' leave of absence from Oct. 29, 1913, Oct. 8, 1913.

LaGrange, J. V., Pharmacist. Granted 3 days' leave of absence from Oct. 23, 1913, under paragraph 214, Service Regulations. Oct. 23, 1913.

LaGrange, J. V., Pharmacist. Granted 4 days' leave of absence from Oct. 29, 1913, under paragraph 214, Service Regulations. Oct. 29, 1913.

Phelps, Earle B., Professor of Chemistry. Detailed to attend the meeting of the National Association for Preventing the Pollution of Rivers and Waterways to be held at Chicago, Ill., Nov. 11-12, 1913. Nov. 4, 1913.

Bell, J. M., Pharmacist. Relieved from duty at Pittsburgh, Pa., and directed to proceed to Savannah, Ga., quarantine station and report to the medical officer in charge for duty and assignment to quarters. Nov. 5, 1913.

Phelps, Earle B., Professor of Chemistry. Directed to proceed from New York, N. Y., to Boston, Mass., and vicinity and advise with local health authorities relative to the conduct of investigations of sanitary administration. Nov. 11, 1913.

LaGrange, J. V., Pharmacist. Granted 2 days' leave of absence from Nov. 14, 1913. Nov. 14, 1913.

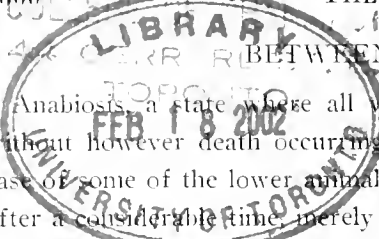
BOARDS CONVENED.

Board of medical officers convened to meet at the call of the chairman at Manila, P. I., for the examination of Pharmacist N. C. Comfort to determine his fitness for promotion to the grade of Pharmacist of the first class. Detail for the board: Surgeon Victor G. Heiser, chairman; Assistant Surgeon B. J. Duffy, recorder.

RUPERT BLUE, Surgeon General.

SAME COMPOUNDER PUTS UP FIRST AND ONE MILLIONTH PRESCRIPTIONS.

J. J. Schott, a well-known pharmacist on Market Street, Galveston, Texas, recently put up the one millionth prescription in his store. He had dispensed the first, some forty-five years ago, and arranged to personally put up the one millionth. A strange circumstance is that the first and prescription one million were both by a Dr. Randall; the first prescriber is dead, and the prescriber of the last is his nephew. We think such a rare coincidence is worth noting.—*Practical Druggist*.



BETWEEN LIFE AND DEATH.

Anabiosis, a state where all vital functions of the organism are suspended, without however death occurring, has been known for about 200 years, in the case of some of the lower animals, which can be dried and restored to life, even after a considerable time, merely by the action of moisture.

A Russian scientist, Prof. Bachmetief, has tried to ascertain whether phenomena such as these could not as well be observed in the case of higher organisms. While examining insects at decreasing temperatures, he found that the temperature of their body, after reaching the freezing point of water, would gradually fall as low as 5 deg. Cent. (in the case of some species even 7 deg. Cent.), in order afterward to rise one degree and eventually to continue falling regularly and gradually. Death would only occur at 10 degrees.

Prof. Bachmetief first thought death to be due to the freezing of humors, but he soon found that the humors of insect bodies already freeze at 5 deg. Cent., any vital function becoming impossible at this temperature. At temperatures intermediary between this point and the lethal temperature, a strange condition of anabiosis is produced, the organism being as it were between life and death. Animals in anabiosis have been repeatedly restored to life, even after a considerable time, by a gradual rise in temperature. This condition could be fitly compared with that of a clock with stopped pendulum, the mechanism of which could be, at any moment, started again by a slight impulse given to the pendulum.

These experiments were then extended to the case of some small-sized mammals (bats and white mice), which by the application of artificial respiration, could be reduced to some sort of lethargy, their body standing temperatures too low otherwise to be endured (0 deg. Cent., and less). Further experiments are to be made on higher animals.

The main purpose of the experimenter was to find a safe cure for tuberculosis. Applications of a mainly practical character, calculated to revolutionize some of our habits, are however likewise to be made. As regards the case of tuberculosis, it is well known that the microbes producing the malady will die or lose their powers of reproduction, on being submitted for two or three weeks to a temperature of 6 deg. Cent. If accordingly a patient could be kept at a temperature of, say, 8 deg. Cent., all Koch microbes would be safely killed or else rendered innocuous. On the other hand, Bachmetief is of the opinion that it would be advantageous to reduce to anabiosis, without any need of feeding them, such domestic animals as are unproductive in winter (bees, sheep, etc.), as well as those which are to be transported to considerable distances (cattle, fowls, fish, venison, etc.), in order to restore them to life whenever required. In order to begin with something practical, Bachmetief has applied his method with excellent results to the long-distance transport of caviar.—*Scientific American*.



Journal of the American Pharmaceutical Association, 2, 1913

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